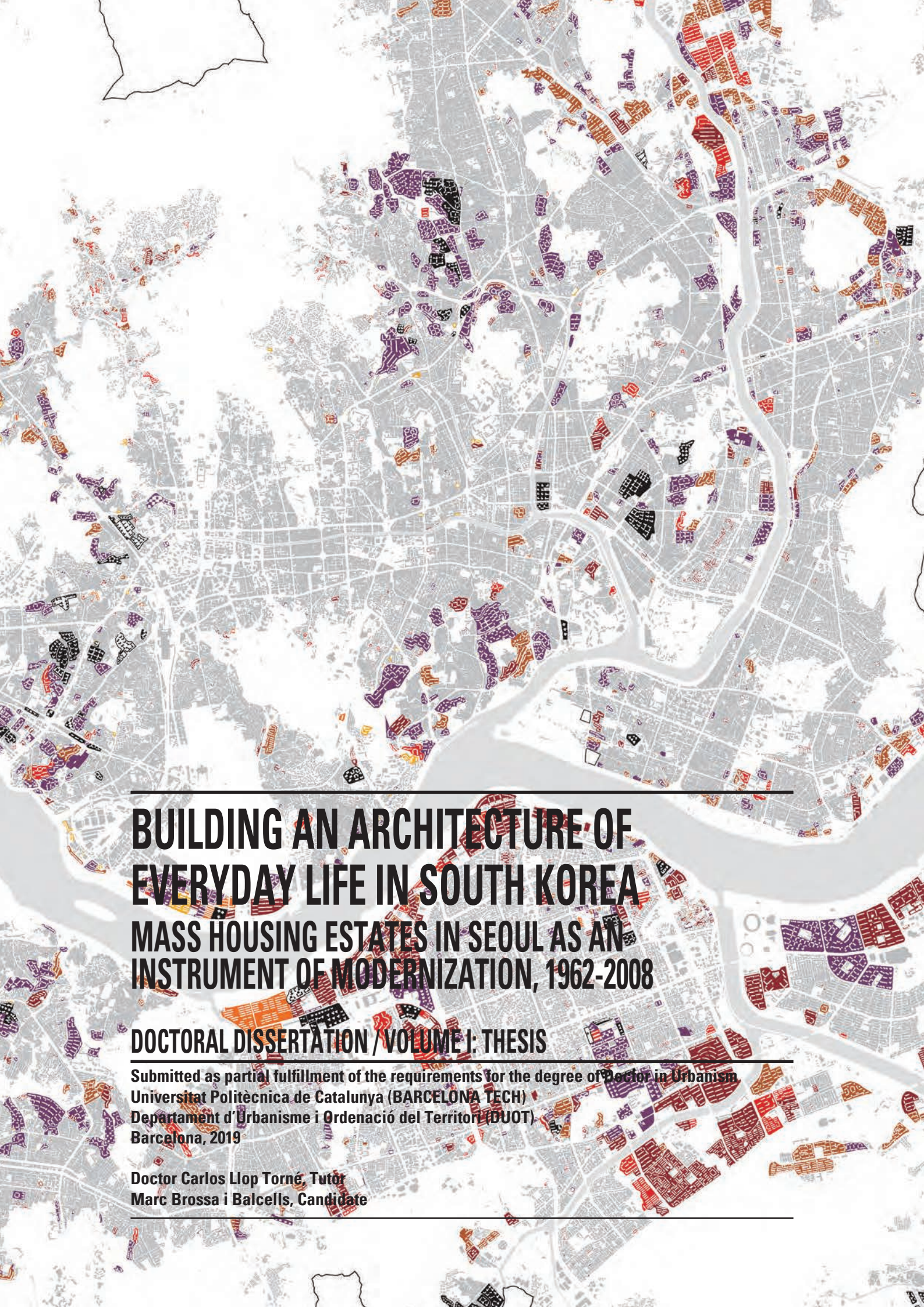

BUILDING AN ARCHITECTURE OF EVERYDAY LIFE IN SOUTH KOREA

MASS HOUSING ESTATES IN SEOUL AS AN INSTRUMENT OF MODERNIZATION, 1962-2008

DOCTORAL DISSERTATION / VOLUME I: THESIS

Submitted as partial fulfillment of the requirements for the degree of Doctor in Urbanism
Universitat Politècnica de Catalunya (BARCELONA TECH)
Departament d'Urbanisme i Ordenació del Territori (DUOT)
Barcelona, 2019

Doctor Carlos Llop Torné, Tutor
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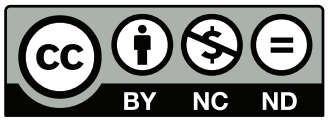

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Note on the romanization of the Korean alphabet

The Korean alphabet, or Hangul, is the native alphabet of the Korean language. It was created by a group of intellectuals led by King Sejong the Great (세종대왕, the fourth monarch of the Joseon Dynasty) in 1443 to improve literacy. Before then, the language had only been written using Chinese characters, which made it very difficult for most of the population to learn how to read and write Korean.

Hangul was designed to be easy to learn and is one of the few alphabets that can be dated. Despite opposition from the intellectual elites, the alphabet quickly spread among the working classes, and today, South Korea has one of the highest literacy rates in the world.

This document uses the Revised Romanization of Korean system (국어의 로마자 표기법), also known as NGR or "New Government Romanization". This system was officially adopted by the Ministry of Culture, Sports and Tourism in 2000 to replace the older McCune-Reiswchauer system.[1]

Names appear in the normal order used in Korea and throughout East Asia, i.e. with the surname preceding the given name. Given names are written according to the most widely accepted practice, with the two syllables separated by a hyphen and no initial cap for the second syllable (e.g. Park Chung-hee). The only exception is for people who, due to their exposure to the West, have changed the order of their names and are widely referred to with their given name preceding their surname (e.g. Syngman Rhee).

1 Official website of the Ministry of Culture, Sports and Tourism: http://asiaenglish.visitkorea.or.kr/ena/CU/CU_EN_8_2_3_1.jsp

SINOPSI

Els polígons residencials –o *apat'u tanji* en coreà– construits a Seül durant la segona meitat del segle XX són la pràctica espacial més característica del projecte modernitzador de Corea del Sud. No són només el subproducte passiu de processos econòmics i urbanitzadors, sinó una estratègia política activa amb l'objectiu d'introduir noves estructures econòmiques i socials dins del del projecte modernitzador del règim desenvolupamentalista, i han tingut un impacte radical en la transformació de la ciutat i la societat. Així, operen a dos nivells interrelacionats: com a pilars del projecte modern de fer ciutat en termes físics (*un mecanisme d'urbanització*), i com a mitjà per a donar forma a una societat i un estil de vida urbans moderns (*un mecanisme de socialització*).

Els polígons d'habitatge massiu han estat essencials per definir diferents àmbits de la vida quotidiana, des de l'escala urbana, passant per l'escala dels barris residencials, fins els hàbitats domèstics.

Malgrat que es calcula que un 53% de la població de Seül viu en polígons residencials, no són considerats com un tema disciplinar per la comunitat arquitectònica. Són menystinguts per la seva percebuda banalitat i estudiats majoritàriament des d'una perspectiva sociològica, econòmica o política. La recerca posa en dubte aquesta suposada banalitat i s'interessa per les lògiques espacials i organitzatives ocultes darrere l'aparent normalitat dels polígons d'habitatge massiu.

La tesi els aborda com un tema arquitectònic i proposa una metodologia per identificar-los, descriure'ls, interpretar-los i criticar-los des de la disciplina a diferents escales: a l'escala de la ciutat; a l'escala de la parcel·la; i a l'escala del tipus edificatori – unitat residencial. Aquests tres àmbits determinen l'estructura bàsica de la investigació.

Cada escala s'ha abordat a partir d'una pregunta de recerca específica. A l'escala urbana, l'objectiu era esbrinar si l'adopció d'habitatge massiu ha estat vista com una oportunitat per definir una visió a llarg termini de la ciutat que es construïa des d'un punt de vista qualitatiu. A l'escala del polígon, la recerca s'ha enfocat a descobrir quines han estat les aportacions morfològiques originals amb les que l'evolució dels *apat'u tanji* de Seül ha contribuït al camp de l'habitatge massiu. I a l'escala de la unitat residencial, l'objectiu ha estat descobrir com el desenvolupament d'una tipologia estandarditzada ha modelat la domesticitat coreana moderna.

Els resultats de la recerca demostren que l'adopció de polígons d'habitatge massiu per respondre a la manca crònica d'habitatge durant grant part del segle XX no ha estat un procés homogeni. Els polígons han adoptat una varietat de papers urbans, s'han destinat a diversos públics i han seguit diferents lògiques de posicionament dins la ciutat durant el període d'estudi. El problema de l'habitatge va ser entès a escala urbana simplement com la provisió quantitativa d'unitats residencials, de manera que els polígons no han contribuït a la formació i l'organització de l'espai urbà. Han romàs com a fragments urbans aïllats, només integrats de forma parcial amb altres processos de creixement urbà, amb la ciutat existent i amb el context natural. No obstant, la sistematització de processos de planificació i de models formals per

a la provisió d'unitats d'habitatge a gran escala es va consolidar en una tecnologia que va normalitzar la construcció unitària de fragments urbans sencers.

A l'escala del planejament dels polígons es van produir innovacions rellevants durant un breu període amb la introducció d'estratègies d'ordenació basades en clústers d'edificis residencials. El desenvolupament d'una unitat residencial estandarditzada també va donar lloc a una tipologia moderna i innovadora que hibrida models d'habitatge globals amb formes autòctones d'entendre la domesticitat, la comoditat, l'ús del pla del sòl i la privacitat.

La tesi evidencia com la transició vers el desenvolupament privat a finals dels anys vuitanta va torbar l'evolució del model d'habitatge massiu a Corea del Sud. Avui dia, els *apat'u tanji* han esdevingut protocols d'organització espacial que estandarditzen l'entorn construit a diferents escales. Els sistemes d'ordenació i les tipologies residencials desenvolupats anteriorment sota la direcció de l'administració pública van ser apropiats pel mercat sense tenir en compte els objectius socials i els continguts teòrics originals.

Paraules clau:

habitatge massiu, urbanisme de Seül, quotidianitat en arquitectura i urbanisme, difusió internacional de models d'arquitectura i urbanisme moderns, apropiació del moviment modern pel mercat, urbanisme desenvolupamentalista a l'Àsia de l'Est.

ABSTRACT

The mass housing estates – *apat'u tanji* in Korean – that were developed in Seoul during the second half of the twentieth century are the most characteristic spatial practice of the South Korean modernization project. They are not just a passive outcome of economic and urbanization processes, but an active political means of introducing new economic and social structures within the modernizing project of the developmental regime, with a radical impact on the transformation of the city and society. Thus, they function at two interrelated levels: as the building blocks of a modern project of city-making in physical terms (*an urbanizing mechanism*), and as a means of constructing a modern urban society and way of life (*a socializing mechanism*).

Mass housing estates have been instrumental in shaping all the settings of everyday life, from the urban scale to residential neighborhoods and domestic habitats.

Although an estimated 53% of the population of Seoul lives in mass housing estates, they are not considered a disciplinary subject. They are largely disregarded as banal by the architectural community and often criticized from a sociological, economic or policy perspective. This research questions that assumed banality and inquiries into the spatial and organizational logics behind the apparent normality of these estates.

The thesis approaches them as an architectural topic and proposes a methodology to identify, describe, interpret and criticize them from a disciplinary stance at different scales: the scale of the city, the scale of the housing estate and the scale of the building type or residential unit. These three scales determine the basic structure of the research.

Each scale has been approached through a specific research question. At the scale of the city, the goal was to find out whether the implementation of mass housing was seen as an opportunity to define a long-term vision for the city that was being built from a qualitative perspective. At the scale of the housing estate, the research examined whether the evolution of *apat'u tanji* in Seoul yielded original morphological contributions in the field of mass housing. And at the scale of the housing unit, the aim was to uncover how the development of a standardized unit type shaped modern Korean domesticity.

The findings demonstrate that the implementation of mass housing in Seoul has not been a homogeneous process. Instead, it has followed different rationales over the study period. The housing problem was understood at urban scale simply as the quantitative provision of housing units. The complexes did not contribute to the formation and organization of urban space and remained as isolated fragments that are partially coordinated with other processes of urban growth, the existing city and the natural context. Nevertheless, the systematization of planning processes and formal models for the provision of housing units at a massive scale were consolidated into a technology that normalized the construction of entire urban fragments.

At the scale of the housing estate, relevant innovations were produced for a brief period with the introduction of site planning strategies based on residential clusters. The development of a stan-

dardized unit type also yielded an innovative modern layout which hybridizes global housing models with local understanding of domesticity, privacy, posture and comfort.

The thesis evidences how, ultimately, the shift to private development at the end of the 1980s prevented further development of the mass housing model. Today, *apat'u tanji* have become spatial organizational protocols that standardize the built environment at different scales. Site planning strategies and unit types developed earlier under the patronage of the public housing authority were captured by the market and pressed into service without their original community-building agendas or theoretical bases.

Keywords:

mass housing, urbanism in Seoul, everydayness in architecture and urbanism, international diffusion of modern paradigms of architecture and urbanism, appropriation of the modern movement by the market, developmental urbanism in East Asia.

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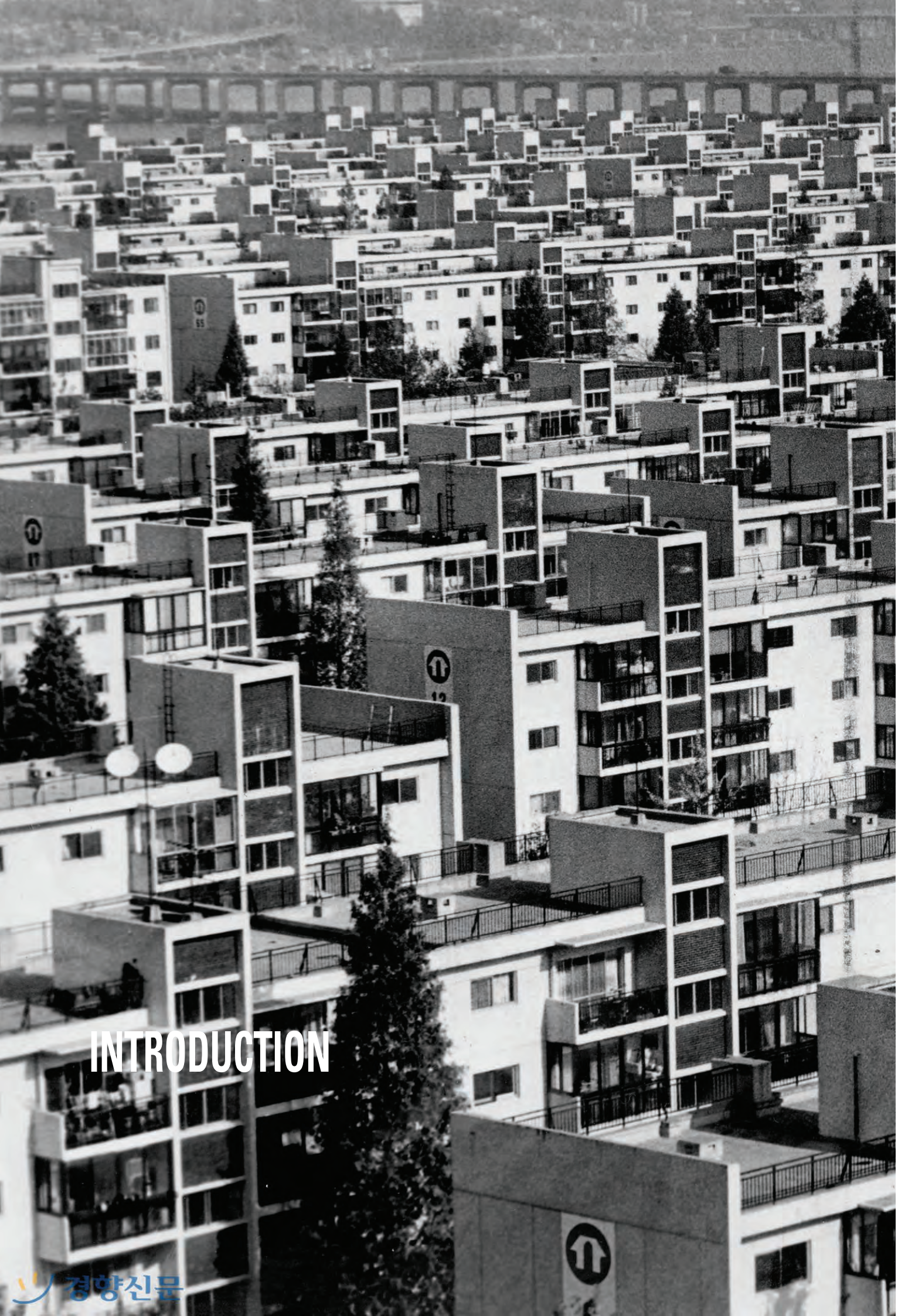

INTRODUCTION

Figure A-1. Banpo Apartments.
Source unknown.

Jesus said to him, "The foxes have their dens and the birds of the air their nests, but the sons of man have nowhere to lay their head."

The Gospel According to Saint Matthew, Chapter VIII, verse 20-21.

"Everyone is aware that modern urbanism has an origin and a permanence that are not reflected in XXth century books about urbanism. They are too blind and too obstinate in talking about the failure of modernity and to blame it on the Athens Charter…"

Santiago de Molina (2015) 'Urbanismo de interiores' (*Interior Urbanism*). Blog *Multiples estrategias de arquitectura.*

"Apartments, once a novel form of dwelling for Korean people, are now the most common type of housing. While they are shunned as the symbol of poverty in most cities around the world, apartments are an important part of Korean life. They are a form of habitation, a means of urban development, a base for financial stability, and finally, a way of life. Now that apartments are inevitably an integral part of Korean society and its living environments, We believe that it is now time for us to ask the question: What are apartments to us? Could they become 'true' home to us, not restraints on our life?"

Kang Hong-bin (2014) 'The Republic of Apartments'. Catalogue of the exhibition (pp. 336). Seoul: Seoul History Museum.

CHAPTER 1
INTRODUCTION

1.1 THESIS

Korean society does not perceive mass housing as an architectural topic and architects are largely alienated from processes of designing such housing, despite its undeniable presence in the city's skyline, the country's economy, and the population's collective imaginary. In this thesis, it is argued that the most characteristic spatial practice in the South Korean modernization project has been the mass housing complexes – or *apat'u tanji* in Korean – developed in Seoul during the second half of the twentieth century. They are not just a passive outcome of economic and urbanization processes, but an active political means to introduce new economic and social structures within the modernizing project of the developmental regime, with a radical impact on the transformation of the city and society. Thus, they function at two interrelated levels: as the building blocks of a modern project of city-making in physical terms (*an urbanizing mechanism*) and as a means of constructing a modern urban society and way of life (*a socializing mechanism*). They have been instrumental in defining a mechanism for the standardization of city-making at different scales, from the urban scale to residential neighborhoods and domestic habitats, and thus have become the default setting for everyday life.

Any introduction to the urban development of Seoul during the second half of the twentieth century is based on four superlative facts: the city is one of the most populated, densest and richest metropolises in the world today[1]. It is also one of the most imbalanced national capitals in terms of its territory, as nearly 50% of South Korea's population lives in the metropolitan area (24 million out of 55 million in the entire country).

While there may be other cities that can make similar claims, what is characteristic of Seoul is the pace at which it was built. South Korea was one of the poorest countries after the Korean War (1950–1953), with a GDP per capita of only $79 in 1960. By 2007, in less than one generation, it had reached the $20,000 mark. This extraordinary economic growth, known as the 'Miracle on the Han River', was based on the implementation of developmental economic policies, in conjunction with the rest of the 'Four Asian Tigers'. Economic growth was accompanied by unprecedented demographic expansion: it took only 46 years (1942 to 1988) for the population to grow from 1 million to 10 million, while it had taken 129 and 127 years respectively for New York City and London to grow from 1 to 8 million (S.-h. Kim, 2016, p. 41).

These remarkable demographic and economic booms, together with the concentration of opportunity in the capital, had a direct influence on the city's urban development. The country's urbanization rate rose from a mere 28% in 1960 to 85% in 2000. The pressure for urbanization was mostly exerted through housing demand for housing, adding to the housing shortage that had loomed over the city since the 1920s. The pull towards the capital was also reflected in the evolution of land value and speculation: between 1964 and 2015, the total land value of South Korea multiplied by 680, from 7.8 million US$ to 5,327 million US$ (S.-h. Kim, 2016, p. 43).

1 See '1.1 Statistics' in Chapter 1, Volume 02.

The accelerated processes of economic development, demographic growth and urbanization were combined in a streamlined modernization project that included a radical plan to restructure society through the construction of a post-colonial national identity, legitimization of the authoritarian regime and the development of a consumer society in which mass housing estates became a key element. They started to appear in 1962, coinciding with the implementation of the five-year economic plans deployed by the new authoritarian regime of General Park Chung-hee, at a time when the housing supply in Seoul had hit an all-time low of 50%. Between 1975 and 2010, mass housing estates comprised 58% of all housing construction in Seoul, with a total of 1,540,002 units built during the period[2]. It has been estimated that in 2013 the city's housing estates contained 1,284,359 units, where 53% of the population lived[3].

Now, the socioeconomic context that supported the emergence and generalization of mass housing estates in Seoul may be shifting, which raises questions about the durability of the model. Housing supply has reached 100% and predicted housing demand is not expected to grow as the South Korean population is one of the fastest shrinking in the world. Profound changes are emerging in the composition of households and there is a real estate bubble. These factors have prompted a review of housing policy by the municipal government, and the cancellation of many urban renewal projects involving mass housing estates[4]. After 2008, the construction of apartment complexes dropped drastically, while other housing types such as multi-family buildings increased (S.-h. Kim, 2016, p. 50).

Mass housing estates are largely disregarded as banal by the architectural community and often criticized from a sociological, economic or policy perspective. This study questions the assumed banality and examines the spatial and organizational logics behind the apparent normality of mass housing. The thesis approaches *apat'u tanji* as an architectural topic and proposes a methodology to identify, describe, interpret and criticize them from a disciplinary perspective at different scales: the scale of the city, the scale of the housing estate and the scale of the building type or residential unit. These three scales determine the basic structure of the research. The main issue addressed at urban scale is whether the implementation of mass housing, as a way to deal with the chronic housing crisis, was integrated into the overall urban structure, according to a vision of the city that was being built. At the scale of the housing estate, the aim is to ascertain whether the development of mass housing produced morphological innovations that contributed to the wider field of housing. The goal of studying the scale of the housing unit is to understand how the development of a standardized unit type defined modern Korean domesticity.

The modernist mass housing project that provided roofs for the 'Miracle on the Han River' and fueled the economic process is undergoing a transition. Mass housing estates in Seoul have already fulfilled their original mission: to provide housing in the quickest, most prosaic way, in a context of scarcity of buildable land and public resources. These changes reflect what some authors have theorized as a transition in the modernization process from a 'second' or 'middle modernity' to a 'low modernity' or 'advanced modernity' (Ascher, 2007; Harvey, 2000; Sieverts, 2003). In the sociopolitical sphere, this transition has meant a shift from industrial to cognitive capitalism, and evolution from the state as an administrator of welfare to the state as a regulator of a public-private system. In urban terms, this has brought a shift from the city as a utopian project to a culture of interpretation of the extant; from a focus on a functional-rational paradigm to a culture of complexity; and from planning as the fundamental tool to conceptualize, build and manage the city to strategic urban management. To conclude, there has been a shift from a planning paradigm founded on the idea of infinite progress, resources and growth that favored unique, mono-functional and

2 Sources: Seoul Development Institute, (2005). Changing Profile of Seoul – Major Statistics and Trends. In: Housing and Construction, Page 3. Available at: http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp. And Ministry of Land, Transport and Maritime Affairs for 2001-2010.

3 Source: Seoul Center for Housing Policy Development, Seoul Metropolitan Government, 2013 (서울특별시 주택정책개발센터장).

4 See '1.5 Geographical Scope and Period of Study' later in this chapter.

fixed solutions that aimed to control the future to a concern for the preservation of non-renewable resources and the natural and cultural heritage that favors adaptive reuse of the built environment and stricter control of land use and density (Ascher, 2007).

The Korean mass housing phenomenon was a mass product with a built-in expiry date. It was designed to be ephemeral and thus to degrade over time, catering to perpetual economic cycles of urban renewal, speculation and gentrification. Now, Seoul's mass housing estates stand as the largest built stock in the city, the urban legacy of the economic miracle. For the first time since their construction, they cannot be taken for granted as the default mechanism for urban extension and blank-slate urban renewal. This brings to the fore their condition as heritage and the issue of their preservation, since successful urban management in the near-future will depend on how this legacy is addressed. Considering modern mass housing as a legacy poses several challenges. As a physical legacy, there is an obvious, unavoidable need to develop options for maintenance, transformation and adaptation of mass housing developments at the different scales on which they operate. As a disciplinary legacy, there is a pressing need to accept the validity of the model, its contribution to the evolution of modern mass housing, and the role architects and urbanists played in its development.

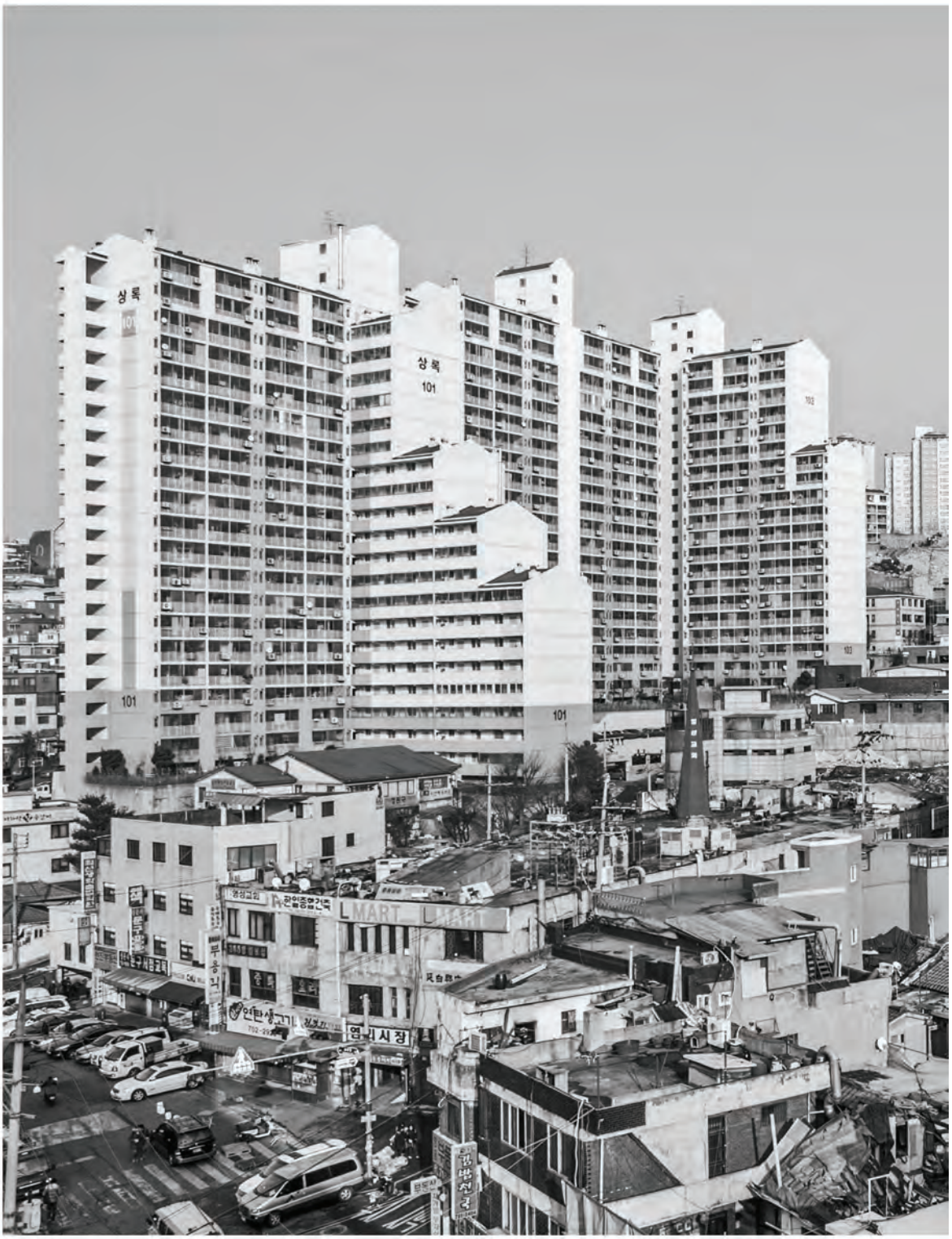

Figure 1-1. Chol-dong Evergreen Apartments (염리동상록아파트), Chol-dong, Mapo-dong, 2014.
Image rights courtesy of Hwang Hyo-choel (황효철).


광염교회

1.2 HYPOTHESES

A. SEOUL'S MASS HOUSING ESTATES ARE THE MOST CHARACTERISTIC SPATIAL PRACTICE OF MODERN URBANIZATION IN SOUTH KOREA

The exponential growth in GDP in South Korea from 1961 was accompanied by consolidation of apartment complexes as the default element of city-making and as the default domestic setting. The gradual establishment of parameters governing the organization of housing estates occurred in parallel to the emergence of a consumer society, the appearance of a new urban middle class and the standardization of modern lifestyles.

While developmental housing policies in East Asia have been directed towards slum clearing, the increase in land value and the promotion of fast growth, the shift towards the middle class by the beginning of the 1970s is specific to South Korea. Following political unrest at home and abroad, the regime tightened its autocratic grip and sought the political support of the emerging middle class by facilitating access to home ownership. A social engineering mechanism was quickly established to change people's traditional housing preferences for single-story buildings in less than one generation. Housing estates have not only addressed the chronic housing shortage present in the capital since the 1920s, but also rationalized modern habitat, contributed to the economic growth of the developmental regime, provided access to home ownership for a large sector of the population and become a key element in the formation of the new urban middle class, a tool for social mobility, the default tool for urban growth and renewal and a form of social control. The urban and social landscape that developed in Seoul during the second part of the twentieth century was shaped by mass housing policies to such an extent that the current organization of the city, and also the very idea of city-making in this context, cannot be fully understood without taking them into consideration.

Focus of Research:

Developmental Experiments

While the modern history of Korea has been a quest for modernization, it has also depended on factors imposed from outside the country. The chain of events that led from the forced opening of the country under the Ganghwa Treaty (강화도 조약) imposed by the Japanese in 1876, the colonization process initiated in 1910 and finally the division of the country in 1948 under US and Russian powers put a dramatic end to a medieval society. A modernization process was imposed through the imperialist policies of industrialized countries (W.-b. Kim, 1999).

The modernization imposed from outside served foreign interests and differed from the contexts in which it had originated: it focused on fast-track industrialization, reorganization of production and state craft and the establishment of a market economy, rather than on political reform and social equality, for instance. A report by the National Planning Association committee on international policy in 1955, which assessed the economic problems and prospects of the country after the Korean War, exemplifies the particular approach

taken by the US administration, under an insightful section entitled '*A Developmental Experiment*':

> *"…in Korea we have involved ourselves, under the guise of a "reconstruction" effort, in a fairly unique experiment in rapid development policy. […] The nature and scope of the Western attack which has thus been launched on South Korea's developmental problems are much more unusual than the problems themselves."* (Lewis, 1955, p. 4)

A Different Modernization

In the introduction to the book *'Made in Tokyo'*, the authors expressed their surprise before what they felt was a radical contrast between the urban landscapes of Europe and Tokyo:

> *"How have we managed to arrive at such a different place to European modernity despite being equipped with the same building technology?"* (Kaijima, Kuroda, & Tsukamoto, 2001, p. 8)

While many European cities still contained buildings from previous centuries, most of the built stock in Tokyo was constructed in the last thirty to forty years, using modern technologies. These technologies were so prevalent that they supported the appearance of so-called 'shameless' spatial compositions and functional combinations unforeseen in Europe. Despite the globalizing aspirations of modernization, its varying perceptions in East Asia and in the West can be traced to the different experience of three related concepts: modernity, industrialization and the urbanization process, due to:

- The means of diffusion of these concepts, related to colonial and post-colonial processes.
- The delayed modernization of these countries and regions compared to their Western and Japanese counterparts, which allowed them to borrow fully developed modern technology and know-how.
- The role of authoritarian states in enforcing the modernization process, which was seen as a 'revolution from above' and a nation-building effort.
- The post-World War II support and guidance of the US, which assimilated modernization and post-war recovery with the construction of a US world order.
- The context of Cold War competition against socialist countries.

As a result of the combination of these factors, the modernization of East Asia has been more homogeneous, pervasive and cohesive, encountering less resistance than in the Western contexts from which it borrowed the basic concepts (Rowe, 2005, p. 46).

The Instrumentalization of the Modern Movement in the Construction of Everyday Life

Modern architecture flourished with post-war recovery. At the same time, it lost its wider program of social transformation: the utopian foundations that had inspired its emergence in the first place. A political bargain of sorts had taken place: development was progressing without the sociopolitical revolution that was meant to come with it. This type of modernization, stripped from its original ideology, can be seen as 'modernization without modernity', i.e., a project for the reorganization and rationalization of production and administration and the construction of a mass market, devoid of a parallel intellectual project to develop objective science, universal morality and law and autonomous art according to their inner logic (Habermas, 1989).

Habermas has described how, during the nineteenth century in the West, the industrial revolution and the resulting modernization of society raised three new challenges for architecture:

- **New qualitative needs related to the rise of industrial capitalism and the emergence of the middle class:** the diffusion of culture to the middle class called for new libraries, schools and theatres. Industrial capitalism brought about the need for infrastructure works, train stations, bridges and tunnels. The emergence of the consumer society required markets, department stores and exhibition halls. And industrialization required factories and workers' housing. Furthermore, these

modern architectures needed a new urban structure that could integrate them in ways that had never been envisioned before.

- **New materials and construction techniques:** the development of new materials (glass, iron and concrete) and new production methods (especially prefabrication and standardization) offered new orders of magnitude that revolutionized the spatial composition and established habits of seeing.
- **New functional and economic imperatives:** the capitalist mobilization of labor, land and buildings led to concentration of the population and housing construction became an investment, independent of its use value. Economic imperatives began influencing uncontrolled urban growth. The functional imperatives of the market were combined with those of the emerging modern estate to influence architecture in unprecedented ways, questioning the role of architects.

According to the German philosopher, while the Modern Movement responded to the first two sets of challenges, *"it was essentially helpless in the face of systemic dependencies on the imperatives of the market and administrative planning"* (Habermas, 1989).

Henri Lefebvre linked the Modern Movement and the consumer society through the notion of *everydayness*. According to the author, everydayness was the set of apparatus and ideological instruments manipulated to achieve generalized alienation, mostly after World War II. Planning processes and modern representation systems had been instrumentalized during the post-war project of capitalist modernization and bureaucratic reorganization of society (Lefebvre, 1947 - 2nd edition, 1958).

Kenneth Frampton has also written about the market's influence on the urbanization process. He adopted the concept of 'megalopolis' with which French geographer Jean Gottmann in the 1960s termed the continuously urbanized northeastern seaboard of the United States, to refer not as much to a particular geographic location as to *"the physical outcome of a global operation driven to maximize multinational corporate finance and the interests of deregulated land speculation"* (Frampton, 1995).

The emergence of developmental policies in South-East Asian, post-colonial countries and regions during the Cold War under the influence of the US administration would become a variation of this bureaucratic society of controlled consumption. The instrumentalization of the Modern Movement also took a turn through the influence of colonial Japan, which had been developing its modern planning since the Meiji restoration (1868). Japanese planners not only imported modern planning concepts, they also developed and experimented with them in the colonies[1]. The technocratic approach to planning, the disciplinary split between urbanism and the architectural profession, and the import of Western models and techniques devoid of ideology inherited from the Japanese planning practice became the norm during the emergence of mass housing in the Korean economic miracle. Under the umbrella of an alliance between the state and private capital, vernacular modern urbanism developed, geared towards the commoditization and standardization of the built environment and everyday life that could be called *'developmental urbanism'*.

1 Through the authoritarian imposition of Western-based planning practices in Taiwan, Korea, China and Manchuria, Japan acted as a transformer and interpreter along the way. Based on the specificities of Japanese cities (the need for rapid growth or reconstruction, compromised land ownership, etc.) and society (lack of tradition of large-scale urban plans, no tradition of integration of architecture and urban design and weak civil society), the planning discipline became controlled by bureaucrats within the central administration, who focused on pragmatic planning without ideology, based on tools and specific projects rather than on large-scale, comprehensive visions (Hein, 2003).

Mass Housing and the City: Urbanism as an Arrangement of Living Rooms

"The architecture of the large city depends essentially on the solution given to two factors: the elementary cell and the urban organism as a whole. The single room as the constituent element of the habitation will determine the aspect of the habitation, and since the habitations in turn form blocks, the room will become a factor of urban configuration, which is architecture's true goal. Reciprocally, the planimetric structure of the city will have a substantial influence on the design of the habitation and the room." (Hilberseimer, 1927)

"Even today it is extremely difficult for many architects to understand that, in the construction of housing, the exterior appearance of the volumes and the distribution of facades should not be considered as the main tasks of architects. Instead, the most important part of the problem is the holistic construction of the individual housing unit according to a modern conception of life. In addition to which they have the duty... of incorporating the sum of these housing cells, that is to say the neighborhood, to the framework of the city so that for each housing unit equally favorable conditions are created." (May, 1929)

"We continue to conceive the city through separate and overlapping systems, or isolated and segregating functions. We persist in seeing in it a mechanistic construction based primarily on the cellular bedroom, from which develops the agglomeration of housing and services as an extension, and finally the city center as the crowning of the entire structure. The history of cities and the most recent analyzes show that an accumulation of housing, even in the hundreds of thousands, is not enough to create a city." (Huet, 2013)

A key element in the adoption of mass housing is the leap from piecemeal urban growth to the construction of the city in self-contained portions. This has reversed the traditional processes of formation of residential building types, in which the housing unit was the last consequence of a spatial chain of decisions that started with the structure of the city as a social organization, which in turn defined the urban fabric, then the residential building within it and finally the unit. Examples of this would be traditional housing types found in specific cultures as expressions of ways of life codified through building laws and the employment of available technologies[2].

The advent of mass housing, and particularly the emergence of the German concept of *'existenzminimum'* in the 1920s, reversed this hierarchy of relationships. Now it was the building type, the urban fabric and the city itself that were defined by the housing unit (Ferrer, 1996). This reversal was already evident in the *siedlungen* built in the Weimar Republic during the 1920s to cope with increasing demographic pressures and a dwindling economy. The hygienist concerns for the provision of light and air came down to determine the internal distribution of the minimal dwelling units (bedrooms to the East, common areas to the West), as well as the *zeilenbau* (row construction) site planning model, with little or no regard for the surrounding urban context.

2 Such as vernacular housing solutions, the Mietskasernen ('rental barracks') or courtyard housing blocks developed in Berlin after the police building code of 1857, the typical residential buildings in Cerda's Eixample in Barcelona or the urban hanok developed in Seoul since the 1920s to respond to ongoing housing shortages.

B. KOREAN SOCIETY DOES NOT PERCEIVE APARTMENTS AS AN ARCHITECTURAL TOPIC

The most characteristic feature of the Korean apartment is the central living room in the standardized nLDK system: it is a symbol of the modern nuclear family as a socioeconomic unit. Rather than an urban vision that influences people's ways of life, it is actually the efficient arrangement of these living rooms and all their related technologies, infrastructures, rights of way and utilities that mainly dictates the layout of the city. Yet these apartments are not considered worthy of study.

South Korea has basically two kinds of professional architects: intellectual architects (well-known architects and university professors) and technocratic architects (office workers for corporate construction firms and developers). Intellectual architects were alienated from the mass-housing production process with the introduction of the developmental economic model, based on close relations between the authoritarian state and the large corporations selected to further the country's development.

As a result, Korean architects do not perceive mass housing estates as an architectural topic, even though they are surrounded by them. The alienation of architects from such social roles is not an isolated phenomenon. It is in line with the neoliberal undermining of the profession since the late 1970s, to eliminate critical resistance through strategies such as the split between architecture and planning disciplines, or the favoring of builder-developers over architects through the private funding of public works (Frampton, 1995).

C. THE PHENOMENON OF MASS HOUSING ESTATES IN SEOUL IS IN CRISIS

The effects of the global economic downturn that began with the 2008 US liquidity crisis have uncovered many deep changes in a Korean socioeconomic context that once favored the emergence and spread of mass housing estates in Seoul, but now renders the model obsolete:

- The chronic housing shortage in Seoul has been overcome.
- Changes in household structure have created different, more diverse spatial needs.
- Negative population growth has contributed to a decrease in housing demand.
- In spite of market-boosting policies implemented after the crisis, the towering household debt and aging population challenge the recovery of the mass housing real estate market.
- Consequently, municipal housing policies have changed, favoring alternatives to mass housing.

Because of these factors, the 2008 financial crisis provides a neat bookend to the period of research, as described in subchapter '1.5 Geographical Scope and Period of Study'.

Focus of Research:

Mass Housing as Built Stock

Until recently, the renovation of housing estates in Seoul was tied to the expectation of economic revenue and was a major driver of urban renewal. Older estates have been replaced with a consequent increase in floor area ratio (FAR). However, if the indicators detailed above are correct and South Korea is indeed facing a crisis of the mass housing model, the renewal of estates from scratch cannot be taken for granted anymore.

Given that 95% of buildable land in the capital has already been built on, successful urban management in the near future will depend on how issues of maintenance, transformation and adaptation of this built legacy are approached. This situation opens a whole new arena of opportunities and challenges for designers and decision-makers.

Mass Housing as Urban Legacy

From the 1970s, housing policies in Seoul were aimed at providing access to homeownership for the middle and upper classes through their own private investment. Real estate speculation became the main source of investment and capital accumulation for families. This situation resulted in general acceptance of speculative processes in regards to relating to the built environment and deep social inequalities between those who could speculate game and those who could not because they lacked funds. The expectation of real estate profit caused gentrification in many sectors in the capital. These urban renovation processes (especially through 'joint redevelopment projects') are based on the *tabula rasa* substitution of existing fabrics by apartment complexes without any regard for preexisting conditions or the urban context. This geography of speculation prioritizes perpetual renewal over preservation or sustainability concerns. Due to this cycle of gentrification, the average time between changes of residence in Seoul is 6.3 years[3].

Furthermore, there was no holistic urban vision organizing the logics of location of mass housing estates and their relationship with the rest of the city during the period of intensive urban growth. The sequence of maps of the evolution of mass housing shows some growth waves, which are related more to land availability than to any planned growth strategy[4]. The absence of a holistic urban vision also implied that the estates did not contribute to general urban systems. They were conceived as independent housing blocks, rather than functional parts of the city (Ferrer, 1996). Today, they stand as gated communities with their own private common spaces and facilities. In addition, the extreme functional simplification of the estates as bedroom communities within the city came at the cost of forced mobility.

As South Korea is quickly entering a new phase of modernity, the urban legacy of its mass housing project will be a critical issue. The challenge lies in how to transition from a paradigm of urban renewal based on obtaining immediate quantitative economic benefit towards a paradigm of urban quality that takes into consideration:

- The preservation of existing buildings and communities.
- Integration into the context.
- Urban pluralism through mixed uses.
- The incorporation of sustainable strategies for funding and use of resources.
- The right to housing for the most disadvantaged sectors of society.
- A holistic urban vision that can rearticulate the relationship of mass housing estates with the rest of the city and natural support, through medium-term and long-term plans.

3 Source: Ministry of Land, Infrastructure and Transport (국토교통부).

4 See from Figure 4-3 to Figure 4-8 in Chapter 4, Volume 02.

Figure 1-2. Jamsil, 2014.
Image rights courtesy of Hwang Hyo-choel (황효철).


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1.3 RELEVANCE

What does the Korean case bring to the mass housing discourse? Why is it relevant to talk about it? Below, specificities of the Korean mass housing project that contribute to the global phenomenon of modern mass housing are described.

1.3.1 PRIVATE MANAGEMENT OF IMPLEMENTATION COMPARED TO OTHER EAST ASIAN DEVELOPMENTAL COUNTERPARTS

Besides its quantitative impact[1], mass housing in Seoul has played a sociocultural role. In the West, mass housing was part of social policies that integrated the paradigm of the *welfare state* after World War II, which aimed to balance the capitalist system by redistributing wealth vertically. Within these social policies, mass housing was adopted as a way to afford *social housing*. Rental housing was provided by the administration below the market price, according to necessity rather than ability to pay. In other words, social housing has a social value, set outside the market's value system.

Rather than being associated with social rights, social policy in East-Asian developmental economies is linked to economic expansion, in what is known as a *productivist welfare system*. In these contexts, public housing policies are orchestrated by the government and subsidized below market price but are not distributed according to necessity. Instead, to promote economic development objectives, male breadwinner households are favored, according to their ability to pay. Thus, social housing acquires an exchange value. By promoting housing ownership below the market price for working families, developmental housing policies have supported the emergence of an urban middle class that in turn will be prone to support the regime. Simultaneously, the provision of housing below the market price has been adopted as a substitute for the social protection measures (stability of income, social services, etc.) that are typical of welfare states. This has allowed focusing public expenditure on industrial and economic growth (Ronald & Doling, 2013).

Despite the characteristics shared with other South East developmental regimes, the role of the public administration in the provision of housing and thus its approach to welfare is unique to South Korea. In the absence of public capital, General Park's military regime established alliances with existing capitalists who, in return for following strict state guidelines for development, enjoyed all kinds of economic and tax benefits (foreign aid, tax advantages, market shares, etc.). This was the origin of the large Korean conglomerates known as *chaebol*. Initially, housing was not seen as an immediate concern for the developmental regime, which focused investment on infrastructure and industry. From 1972, after initial attempts to provide low-cost public housing for the lower classes and in response to domestic political unrest, there was a major shift and the administration enlisted private construction companies to develop mass housing targeted at the emerging middle class. Subsequently, and in contrast to other developmental regimes such as Hong Kong and Singapore, mass housing in

1 See '1.1 Thesis' in this Chapter.

South Korea became a source of speculation rather than a distributive investment. The preferential distribution of credit and loans to the chaebol and limited financing for private housing facilitated the accumulation of land in their hands. Thus, the high demand, the lack of public land and the privatization of housing development made real estate investment a fundamental element in the accumulation of wealth, resulting in a speculative boom beyond government control. Mass housing in South Korea developed as a spatial practice geared towards maximizing economic profit through real estate investment for the middle class, the government and the private construction companies.

1.3.2 MASS HOUSING KNOW-HOW AND THE EXPORTATION OF MASS HOUSING MODELS

In 2012, the Ministry of Land, Transport and Maritime Affairs and the Korea Land and Housing Corporation[2] created the International Urban Development Cooperation Center (IUC) to develop overseas market penetration plans and support Korean construction companies to pursue overseas urban development projects. The recession of the building industry in South Korea, the experience of Korean construction companies in mass housing, their presence in the international scene since the 1970s with infrastructure projects in the Middle East, and the role model of the country due to its economic success and fast urban development (particularly with new town projects) facilitated the transition of South Korea from importer and adaptor of mass housing models to distributor and exporter. The main Korean construction companies (Posco Construction, Daewoo, Kyeongnam, Daewon, GS Construction, Bando Construction, Samwon Construction, Hanwha, Woorim Construction, etc.) are involved in projects in Vietnam, Malaysia, Singapore, the Emirates, Kuwait, Saudi Arabia, Oman, Algeria, Qatar, Libya, Egypt, Senegal, Angola, Nigeria, Tanzania, Tunisia, Kazakhstan, Azerbaijan and Bolivia (Land and Housing Corporation [토지주택연구원], 2012).

The fast and profitable development of Korean new towns has inspired emulation in developing countries that are eager to address demographic pressures, relate their rapidly growing metropolises to the global economy and promote them as world cities. But despite the adoption of universal building forms from the modern legacy, the specific conditions of their implementation and financial success make Korean new towns an original phenomenon that is difficult to replicate elsewhere. Furthermore, the costs of developing smart cities means that the smart city model may not be applicable in developing countries (Stokols, 2014).

2 The Korea Land and Housing Corporation (LH or, 한국토지주택공사) is a government-owned organization responsible for the development and maintenance of the land and specifically of housing (http://world.lh.or.kr/). It was created in 1962 under the name 'Korean National Housing Corporation', as a successor of the Chosun Housing Corporation (Yun, 2003, p. 295), to cater for the developmental needs of General Park Chung-hee's regime. The original Housing Corporation was founded under the Japanese colonial government in 1941, with strong ties to the Japan Housing Corporation from the same year. Its main goal was to address housing issues for the Japanese living in the colony, and as such it was the first public institution dedicated exclusively to the construction of housing in Korean history (Yun, 2003, p. 234).

In addressing the already acute problem of housing shortage in a context of scarcity of materials due to World War II, the organization became a vehicle for the introduction of two intertwined concepts with a long-lasting influence in the development of housing in South Korea. From a technical perspective, the need to rationalize land use and contruction systems lead to the adoption of modern site planning methods, construction techniques, standardization and mass production from abroad, mainly via Japan. This, in turn, had a deep sociocultural impact in the adoption of modern and Westernized lifestyles in a top-down fashion.

1.4 DEFINITION OF *APAT'U TANJI*

After World War II, a combination of factors including the need to rebuild cities, mass exodus from rural to urban areas, the baby boom and the need to reinvigorate the economy intensified the historical chronic housing shortage throughout Eurasia. This led to mass production of houses in many countries in the region, irrespective of political regime or economic situation (Chemetov, 2004, p. 9).

To achieve such a huge undertaking, new technical, financial and sociological prototypes and new formal models had to be tested, leading to a complete restructuring of cities and their relationship with the land. The concept of mass housing reflected a global context in which there was much discussion and thought regarding urbanism and low-income housing. This subject had already begun to be addressed in Europe during the interwar period and in America since the New Deal (1933 - 1936).

This led to the rationalization of low-income housing, the birth of functionalism, the application of hygiene principles to architecture and the emergence of planning as a discipline. The principles of new cities could be applied throughout the world in any context (and seemingly in any political system), and the International Congress of Modern Architecture (CIAM) became the vehicle for this globalization[1] (Fourcaut, 2004, p. 17).

The most ubiquitous product in this search for new models was the apartment complex prototype, i.e. the unitary construction of various buildings, mainly for housing, which operated somewhat independently from the surrounding urban context. This typology was created not only in response to housing crises, but also to modernize the construction industry, promote industrialization and drive the development of prefabrication. It also allowed the government to manage financing methods and urban policy (Fourcaut, 2004, p. 16), and therefore to control society in general (Guest, 2004, p. 164).

Mass housing production spread throughout post-war Europe on both sides of the Iron Curtain, with little concern for the political system that was in place. The model was adapted to the specificities of different countries, not so much in terms of style as in two key aspects: the urban role of housing blocks (particularly related to the strength of the local urban tradition), and the legal system for land ownership (Coudroy de Lille, 2004, p. 93). In other words, although mass housing was similar in form in different countries, the way each country adapted it had different connotations. France, for instance, created the *grandes ensembles*, Spain the *polígonos de vivienda*, East Germany the *sozialistische Wohnkomplexe*, Poland the *osiedla*, the Soviet Union the *microraions* and Czechoslovakia the *sídliste*.

Korea's late economic development (due to certain historical conditions such as the Japanese colonization until 1945 and the period of political instability culminating in the 1951-53 Korean War, among other factors) delayed the wave

1 The new principles of mass housing and its impact on cities are exemplified in the development of garden cities in England, Stein's residential units, the social housing projects built in Austria and the Netherlands, the Siedlungen of Germany, the research on minimum housing units, the urban theories of Gropius and Hilbersmeier in Germany, Le Corbusier's Cité Radieuse and the Soviet superblock theories, among others. These modern models relied on technological advances in the use of steel, concrete, and prefabricated systems. They were put in practice after World War II, driven by actual demands.

of mass housing until well into the 1970s. This meant that when construction models reached Korea, initially from Japan[2] and subsequently from Germany, the United Kingdom and the United States, these models had already been tested and improved upon, both at political and economic level and in a formal, constructive manner.

In South Korea, apartment complexes are called *'apat'u tanji'*, a hybrid term that encapsulates the complex process of international diffusion of modern architectural models and their adaptation to local particularities. French geographer Valérie Gelézeau has explained that *'apat'u'* is a contraction of the English expression *'apartment house'* adapted to Korean phonetics, and has the same meaning as the English term, i.e. a collective-housing building at least five stories high.

The second term is the Sino-Korean *tanji*, composed of two ideograms: *tan* (団), meaning sphere, mass, envelop or limit; and *chi* (地), meaning earth or land. In Korean, the etymology of the word refers to a perimeter or piece of land of limited size intended for residential use similar to that implied by the English expressions *'housing estate'* or *'housing complex'*. In Japanese, *danchi* denotes a residential estate, typically built by the public authority as public housing. It may contain different housing types, from apartment buildings to detached houses. The term seems to have been introduced to Korea by the Japanese colonial rulers in the 1920s and 1930s.

From a legal perspective, the fist appendix of the Building Law (건축법 시행령 별표1) defines 'apartment building' (아파트) as a building for collective housing with five or more storeys. At the same time, the first Chapter of the Korean Housing Law entitled 'General Rules' (주택법 제1장 총칙) defines housing complex (주택단지, *'chutaek tanji'*) as: *'the parcel of land that is used to build housing and its associated amenities and welfare facilities or to define a housing site, subject to the approval of the housing construction business plan or land development plan in accordance with Article 15*[3]*'*. It also specifies that parcels divided by railways, highways, or main roads shall be considered separate complexes. Thus, in terms of land ownership, a housing complex must be contained within a single parcel[4].

The Korean concept of *apat'u tanji*, or apartment complex, is therefore defined by different criteria: land ownership –it has to be contained within a single parcel-; building type –buildings for collective housing at least five-storey high-; an arrangement comprising more than one apartment building , basic self-reliance –with a provision of facilities and amenities according to the number of residents-; and built within a relatively short period of time -10 years on average.

The term *'apat'u'* remains somewhat ambiguous, since in Korean it is used to refer both to apartment complexes (short for *'apat'u tanji'*) and to individual apartment buildings.

2 The main mediator of Western influence during the colonial era (Fourcaut, 2004, p. 17).

3 Of the aforementioned Housing Law.

4 Similarly, the 1994 Chut'aek Handbook defined *tanji* as follows: *"An operation in which both the building process and the forms of obtaining planning permission are set by the Housing Construction Acceleration Law (1972). The operation must be carried out on land owned by a single owner and includes site planning and the building of the homes and shared facilities."*

1.5 GEOGRAPHICAL SCOPE AND PERIOD OF STUDY

1.5.1 GEOGRAPHICAL SCOPE

The research focuses on housing estates (*apat'u tanji*) within the city of Seoul, since it is in the capital where experimentation with zoning regulations due to the unusual population density and real estate values has pushed development of the typology.

One aspect of the economic growth instigated by Park Chung-hee's dictatorship was to concentrate investment in the country's capital city, making it the main focus for opportunity. As a result, today Seoul houses 22.3% of the population, and the Metropolitan Area is home to 48%. This divide between the capital and the rest of the country is one main feature of South Korea's modern urban development.

Paradoxically, a significant part of the Korean urban-growth model was developed outside of Seoul proper, in the satellite cities (신도시) that began to be built in the early 1990s on undeveloped land outside the city, to reduce the population density and housing shortage in the capital. In these *ex-novo* cities, it was possible to try new urban systems optimized for the implementation of mass housing estates without having to work around existing urban structures. These innovations would eventually be incorporated into the consolidated city. Despite their undeniable interest, they are outside the scope of this research, as their sheer magnitude makes them worthy of a specific study.

1.5.2 PERIOD OF STUDY

The study focuses on the period from 1962 to 2008 for the following reasons:

The year 1962 marked the start of five-year economic plans[1] to move the country forward and quash poverty, created by the military dictatorship of the Third Republic, which rose to power following the 1961 military coup led by Park Chung-hee. These economic measures led to unprecedented economic growth, allowing one of the poorest countries at the end of the Korean War (1951–1953) to become a G-20 member. One aspect of this economic growth was to concentrate investment in the country's capital city, making it the focus for opportunity, and a destination for migrants from the countryside[2]. These migrants made the chronic housing shortage that had existed since Japanese colonization even worse.

To tackle this problem, a series of policies were reintroduced as part of the five-year economic plans. The key developments were:

- Approval of a law on expropriation of land (1 January 1962)
- Approval of a land-planning law (20 January 1962)
- Approval of the urban planning code (20 January 1962)

1 President Park's regime adopted five-year economic plans to steer and accelerate economic growth, mirroring Japan's post-war growth. Developmental capitalist economies used economic planning policies developed in the Soviet Union.

2 Cumings, Bruce: *'Korea´s Place in the Sun'*.

- Approval of the construction code (20 January 1962)
- Creation of the *Daehan Jutaekgongsa* (Korean National Housing Corporation - KNHC).

To show that the country was modernizing and to demonstrate to the population the benefits of modern lifestyles, the Mapo apartments were built in 1962[3] (Sohn, 2003).

The year 2008 saw the first widespread reports of the global economic recession as a result of the liquidity crisis in the United States. Although it is still too early to assess the long-term impact of the crisis, which experts have dubbed the worst since the Great Depression of the 1930s, it had immediate consequences in South Korea, one of the countries that are most dependent on exports[4].

The crisis revealed a series of latent dynamics in relation to the hitherto predominant housing model:

- **Reduction of the housing deficit:** The supply of housing in the city, which was as low as 50% in 1966, reached 96.7% in 2010. In the rest of the country, supply reached 100% in 2002 and continued to rise to 112.9% in 2010. For the first time since the 1920s, there is no housing deficit in the capital[5].
- **Changes to the family structure:** For centuries, Korean society relied on the Confucian social contract: parents would do almost anything to take care of their offspring, and in return when they got old, they would be supported by their children. Extended families were the norm and there was no need for a social security system (Choe, 2013). However, the accelerated industrialization and modernization of the country from the 1960s initiated a rapid erosion of traditional family structures and a shift to the nuclear family. The population policies of the government within the five-year economic plans during the years of economic growth favored these changes and the standardization of households into socioeconomic units. This relatively homogeneous family structure was reflected in the standardized nLDK system for the internal distribution of apartments[6]. The 1997 financial crisis and the shift to neoliberalism in its aftermath catalyzed fundamental changes in this social fabric. In 1980 the average household in the country numbered 4.54; by 2007 it was down to 2.88[7] (Bae, 2007). According to the Korea Institute for Health and Social Affairs, 27% of all households were single-person households in 2016 (Ng, 2016), a ratio that is expected to increase in the near future. As a result, households are much more diverse and dynamic. The lack of embedded flexibility of the nLDK unit plan means that it cannot adapt to the spatial needs of these rapidly changing family arrangements[8].
- **Negative population growth forecasts:** A recent forecast by the official agency Statistics Korea made public on 28 March 2019 confirmed that South Korea is on the verge of a steep population decline. Accordingly, the country's population would reach a peak of 51.84 million by 2028, and would then drop to 39.29 million by 2067 (Noh, 2019). It has been estimated that Seoul will lose 1 million residents between 2008 and 2040[9]. The main reason is the sharp decline in fertility rate[10], one of the world's lowest at 0.98 in 2018. This is due to the combined effect of relatively high levels of youth unemployment[11] and to the economic challenges of raising a family, particularly the costs of children's education and housing, among others. A direct consequence of the low birth rate is the accelerating

3 This is considered South Korea's first mass housing estate since it was built by the Korea Housing Corporation, even though a previous *tanji* had been built in 1958 by the Seoul Municipal Government, the Jong-am Apartments (see Chapter 19 in Volume 02).

4 Exports accounted for 40% of Korean GDP in 2008. Ahn Choong Yong, 'That Sinking Feeling: Asia Hangs on as the Crisis Deepens', a Global Asia: http://www.globalasia.org/Back_Issues/Volume_3_Number_4_Winter_2008/South_Korea_Wary_of_Another_Financial_Crisis.html

5 See Figure 4-3 and Figure 4-4 in Chapter 4, Volume 01.

6 See Chapter 22 in Volume 01.

7 See Figure 1-3.

8 See '24.1 Rationalization and standardization of the domestic environment' in Chapter 24, Volume 01.

9 See Figure 1-4.

10 The fertility rate indicates the average number of children a woman gives birth to in her life.

11 It stood at 9.5% for ages 15 to 29 in 2018 (Suzuki, 2019).

ageing of the population. While in 1970 only 3.1% of the country's population was 65 and above, this percentage more than doubled in 2000. According to Statistics Korea, the ratio of senior citizens will double again in 2019 to reach 14.9% of the population and it will continue to increase to reach 25% in 2030, 33.9% in 2040 and 43.9% in 2060[12]. This demographic time bomb is expected to affect economic activity and to challenge the pension system. It is too early to assess its effects on the mass housing model, but the transition from a chronic housing shortage scenario for most of the twentieth century to a situation of overstock will have a foreseeable impact.

- **The housing bubble:** The effects of 2008 financial crisis had immediate effects on the Korean housing construction market, but the worst hit came in 2013. The housing bubble caused prices in the Metropolitan Area to fall by 14.7% between July 2008 and December 2012. The depression put many large and small constructors at risk of bankruptcy, so many of their workers went into debt because they were forced to buy unsold apartments to provide their employers with liquidity (Park, 2013). Official data[13] shows the construction of apartments has increased to match levels prior to the crisis[14] and the number of unsold units has been reduced yearly since 2013 thanks to market-boosting policies. However, in spite of the increase in the number of transactions, price growth is still slow due to heavy household debt and the aging population. The main group of potential buyers, population between ages 30 and 49, has been shrinking since 2006 (Yoo, 2015).

As Kim Sung-hong explained, *"After the financial crisis of 2008, however, both direct consumers (land owners) and indirect consumers (potential buyers) began to sense the decay of the 'real estate myth', the idea prevalent in Korea for the preceding 50 years that growth in the housing market would go on forever. Controllers – government institutions that are supposed to stand for the public good – began to notice signs of economic uncertainty in large-scale development and redevelopment, and consequently turned their attention to piecemeal renewal and regeneration"* (S.-h. Kim et al., 2016, p. 24).

As a result of the aforementioned factors, the shift in municipal government in October 2011 following Park Won-soon's rise to power led to a series of changes to the municipal housing policy:

- The urban renewal plans approved during the previous administration are being revised. There are currently 610 inner city renewal projects, which are referred to as "new towns" (뉴타운), named after the planned towns built in post-World War II Britain. Such projects typically involve increasing the floor area ratio (FAR) of the area designated for urban renewal to make the operation profitable. This increase in density is only possible with mass housing. Because the price of the land increases, less than 30% of the original owners are rehoused after the urban renewal project is complete. The financial profit expected from these renewal projects has fueled a housing bubble and an ongoing gentrification process that are both economically and socially unsustainable[15].
- Support for other urban housing typologies are in high demand, such as the small units for one or two people called "urban-type housing" (도시형 생활주택).

These symptoms indicate that the socioeconomic context that favored the emergence and hegemony of *apat'u tanji* is shifting and pose significant questions about the continuity of the model.

12 See Figure 1-5.
13 See Figure 1-6.
14 See Figure 2-2 in Chapter 2 and Figure 4-6 in Chapter 4, Volume 01.
15 See '3.6 New Town Initiative, 2002' in Chapter 3, Volume 02.

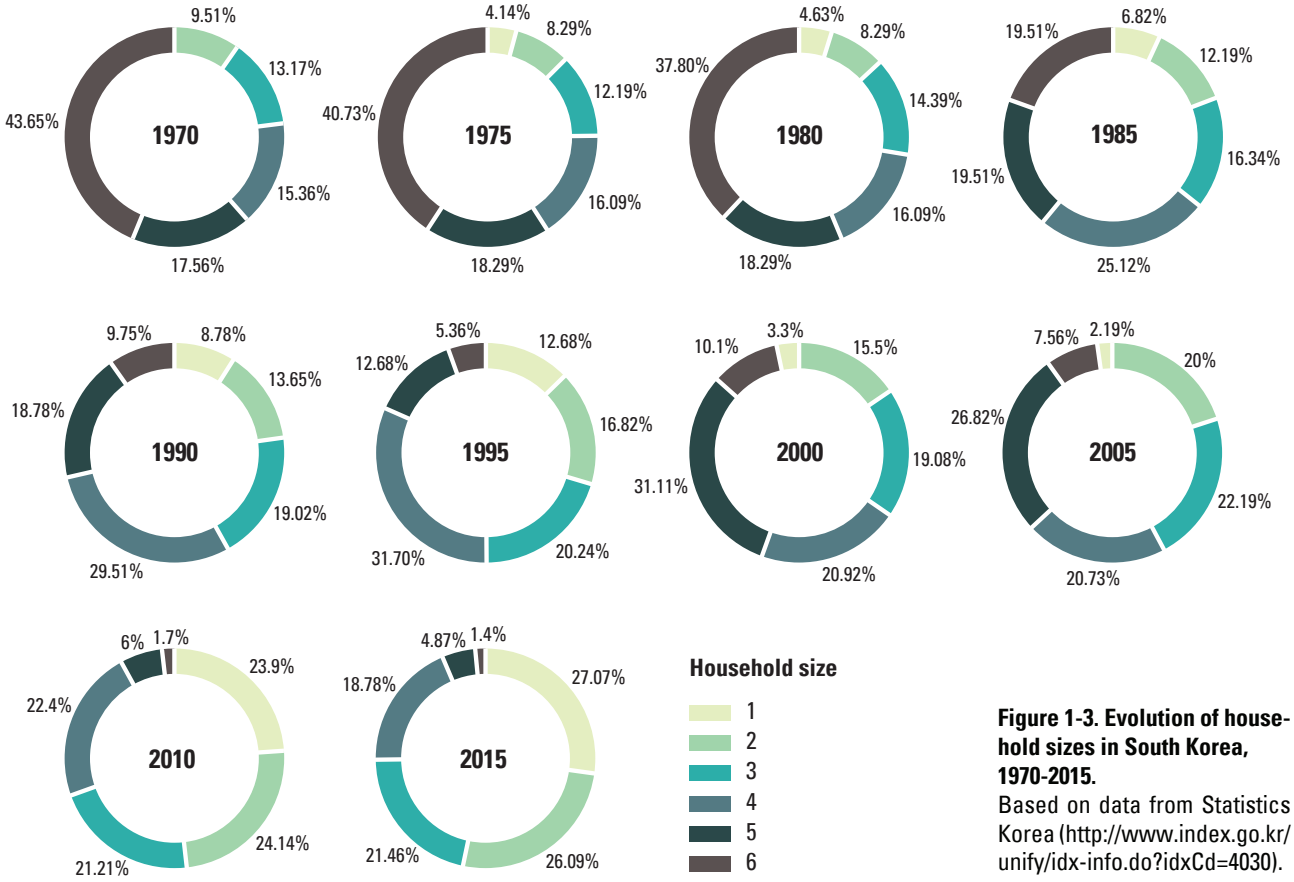


Figure 1-3. Evolution of household sizes in South Korea, 1970-2015.
Based on data from Statistics Korea (http://www.index.go.kr/unify/idx-info.do?idxCd=4030).

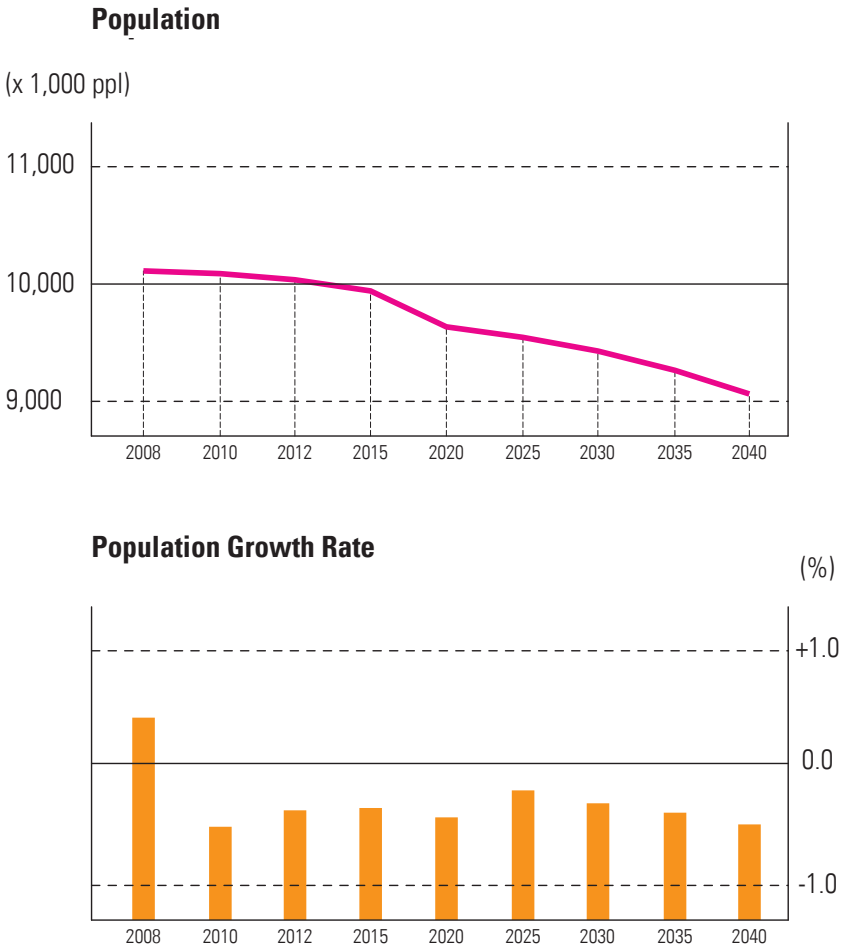


Figure 1-4. Total population and population growth rate in Seoul, 2008 - 2040.
Based on data from the Seoul Metropolitan Government (http://data.seoul.go.kr/dataList/datasetView.do?infId=8001&srvType=C&serviceKind=2).

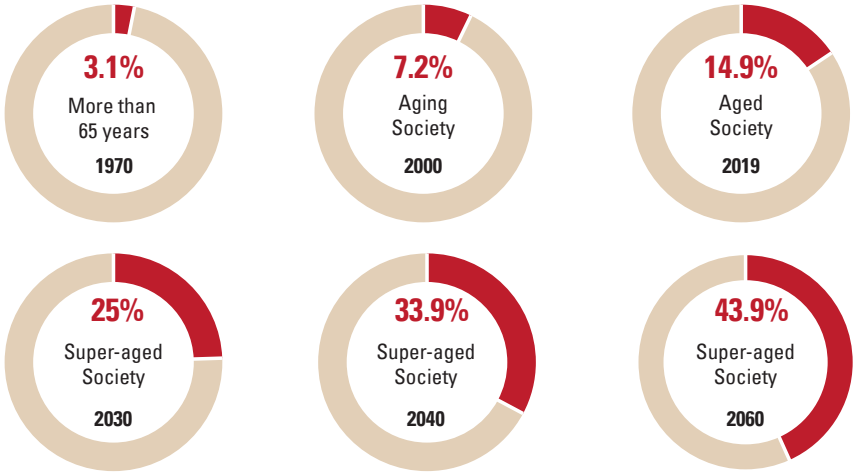


Figure 1-5. Ratio of population over 65 years old in South Korea, 1970-2060.
Based on data from Statistics Korea (http://www.index.go.kr/potal/main/EachDtlPageDetail.do?idx_cd=1234).

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Built apartments*	Seoul	24,730	31,917	51,370	47,107	43,063	45,104	29,009	41,351	25,226	74,984	-
Unsold apartments*	Seoul	2,486	1,803	2,729	1,861	3,481	3,157	1,356	494	274	45	27

* units of housing

Figure 1-6. Number of apartment units built and unsold in Seoul, per year 2008 - 2018.
Data sources:
For built apartments, Seoul Metropolitan Government.
For unsold apartments, Seoul Metropolitan Government (2008 - 2014) and Ministry of Land, Infrastructure and Transport (2015 - 2017).

Figure 1-7. Donga Yakushu Heights (동아약수하이츠아파트). Apartments in Jung-gu, Shindang-dong, 2012.
Image rights courtesy of Hwang Hyo-choel (황효철)

1.6 METHODOLOGY

1.6.1 ON URBANISM AS A DISCIPLINE

A) A multi-scalar approach to urban form

This research is based on an understanding of urbanism as the study of urban form within the discipline of architecture. It focuses on urban growth in its alternative configurations. Relationships among physical forms and the interpretation of urban elements (such as streets, building types, plots and infrastructures) as well as urban processes (including the mechanisms for intervention, construction, ownership, use and transformation over time) are treated as the fundamental objects of theory (de Solà-Morales, 1997, pp. 14-15).

The architecture of the city or urban form is approached methodologically as the combination of three overlapping logics: infrastructures, plots and buildings. Each is subject to different time cycles, social and historical underpinnings and scalar frameworks; each produces diverse visual and aesthetic impacts. They may be the outcome of a comprehensive design or completely independent from each other (de Solà-Morales, 1997, p. 15). This theoretical framework has two important consequences in the development of the thesis: the valuing of time as a fundamental lens to understand the construction of the city and a multiscalar approach that encompasses the scale of the city, residential quarters and domestic arrangements. These three scalar frameworks determine the basic structure of the investigation.

B) Space as a social product

Even when the focus is on physical form, the impact of social, political and economic issues on urbanization processes is not overlooked. As Jeremy Till stated in reference to a quote by Henry Lefebvre, *'Once Lefebvre has said it – (social) space is a (social) product – one can never see the world as a place set apart, or reduce architecture to a set of abstract forms'* (Till, 2009, p. 126). For Lefebvre, space was not empty, neutral, objective and immutable, but a 'social product' resulting from social practices, actions, relationships and experiences. It was as much a product as a means of production. The ultimate goal of his book *'La production de l'espace'* (1974) was to shift the dominant study of space 'in itself' as abstract and fragmented, to a critical analysis of the productive activity involved in space and the social relationships inherent in that production:

> *"According to Marx (...), the mere finding of the existence of things (...) is to ignore what things contain and disguise: social relations and the forms of those relations. From the moment that these relationships inherent in social things are not taken into consideration, knowledge is lost, being incapable of finding the indefinite and indefinable variety of things. Knowledge is lost in classifications, descriptions and eventually into fragmentations".*
>
> (Lefebvre, 1981, pp. 137-138)

This shift from an understanding of space in itself towards understanding its processes of production in heterogeneous social practices involves framing the formal analysis of the visual with the related *'collective processes operating on various scales and on various facets, including their materiality, representation, use, experience and imagination'* (Stanek, 2012, p. 52). Lefebvre would go as far as to state that disciplinary fragmentation in the analysis of space was an alienating strategy devised by the power structures.

Despite the globalizing intentions of the Modern Movement, as evidenced in shared building forms, the modern mass housing project has had radically different social agendas in different places. This tension between international modernity and local identity has been a constant in the development of modern architecture. Since the reasons for implementing mass housing in South Korea were very different from those that supported its development in other locations, the study of mass housing should be framed in a way that encompasses form and the sociological, political and economic issues behind it. Thus, drawing as a main disciplinary tool will be complemented by interpretations in order to situate them within the sociopolitical context.

TOPICS	VOLUME 01: THESIS	VOLUME 02: ANNEXES	RESEARCH QUESTION
INTRODUCTION	Chapter 1	Front Matter	
CONTEXT	**Section 1** Chapters 2 - 5		
CITY SCALE	**Section 2** Chapters 6 - 9	**Section A** Chapters 1 - 6	Was the implementation of mass housing in Seoul seen as a field of experimentation an opportunity to define a long-term urban vision from a qualitative point of view?
THE SCALE OF THE HOUSING COMPLEX	**Section 3** Chapters 10 - 20	**Section B** Chapters 7 - 19	Has the evolution of *apat'u tanji* in Seoul yielded original morphological contributions to the field of mass housing?
THE SCALE OF THE HOUSING UNIT	**Section 4** Chapters 21 - 24	**Section C** Chapters 20 - 21	How has the development of a standardized unit type shaped modern Korean domesticity?
CONCLUSIONS	Chapter 25		

Figure 1-8. Diagram of the structure of the research.
The research is divided into two volumes. Volume 01 encompasses the main body or thesis and Volume 02 contains graphic appendices. The structure of both volumes is the same, but Volume 02 lacks the socio-political-economic context, so it only includes the last three sections. Accordingly, Section 2 in Volume 01 corresponds to Section A in Volume 02; Section 3 in Volume 01 corresponds to Section B in Volume 02; and Section 4 in Volume 01 corresponds to Section C in Volume 02.

1.6.2 STRUCTURE AND METHODS

The thesis is divided into four sections: an introduction to the social, political and economic context of the implementation of mass housing in Seoul, the urban scale, the scale of the housing complex and the domestic scale.

The first section introduces the social, political and economic context of the implementation of mass housing in Seoul. Chapter 2 introduces the concept of the developmental state as the main politico-economic framework in order to understand basic features of the housing policies that were implemented, as well as the approach taken in South Korea. Chapter 3 further examines the relationship between developmentalism and urbanization. Chapter 4 describes the chronic housing shortage during the twentieth century as one of the main reasons for the adoption of mass housing in the city and Chapter 5 characterizes mass housing as a social contract between the three main social actors during the developmental period: the authoritarian state, the construction companies within large family-owned industrial conglomerates (*chaebol*) and the new urban middle class. This is achieved through an analysis of the existing literature on the different topics.

A second section looks at the urban scale of mass housing in Seoul from the perspective of structural and territorial organization (Section 2 in Volume 01 and Section A in Volume 02). The main goal is to determine whether the implementation of mass housing in Seoul as a solution to the chronic housing crisis was considered a creative opportunity to define a cohesive high-density urban model or whether it was simply seen as the provision of self-contained housing units from a quantitative perspective. To assess this, the study period was divided into phases by means of a graphic timeline. Thus, large amounts of data could be consolidated into a compact format and comparisons could be established among

categories. Critical points of overlap define the phases. This is carried out in Chapter 2 of Volume 02 and synthesized in Chapter 6 of Volume 01. The section's main question is addressed by comparing the role of mass housing in plans for Seoul during the study period with what was actually built, through a series of maps featuring the development of mass housing in comparison with the evolution of urban infrastructure in the previously established phases. This exploration is contained in Chapters 3 and 4 of Volume 02. The conclusion, stated in Chapter 7 of Volume 01, is that the adoption of mass housing did not provide a new urban model. However, the large-scale provision of housing units consolidated into a technology for the standardization of entire urban fragments. Chapter 8 in Volume 01 expands this idea through a review of existing literature. The remaining chapters of the section in Volume 02 investigate Seoul's urban grids.

The third section focuses on the scale of the housing estates (Sections 3 in Volume 01 and B in Volume 02). The aim was to find out whether the development of mass housing complexes has yielded original morphological contributions to the wider field of mass housing. This was achieved through the graphic analysis of twelve case studies on a range of research topics. The cases were redrawn to allow for comparisons and reveal possible evolution. They were not used as groundwork to verify previous theoretical foundations: the goal was to gain new knowledge through their representation and comparison. Section B in Volume 02 includes a chapter on each case study plus a final chapter with urban morphology and building type references. Each chapter in Section 3, Volume 01 shows the evolution of one of the research topics that structure the case studies in order to draw conclusions.

The fourth section looks at the scale of the building type and the housing unit to describe how the development of a standardized unit type has shaped modern Korean domesticity (Sections 4 in Volume 01 and C in Volume 02). In Volume 01, Chapter 21 introduces the theoretical framework of the section, Chapter 22 considers the evolution of the standardized apartment layout in relation to how the government's population control policies aimed to shape middle class families, Chapter 23 uncovers how the adaptations residents have made to their standardized habitat reflect an individual sense of domesticity, and Chapter 24 summarizes the conclusions. In Volume 02, Chapter 20 looks at how the Korea Housing Corporation marketed the mass housing lifestyle by publishing its own magazine and Chapter 21 provides a sample of how families see themselves and their ongoing act of inhabiting by drawing their domestic environments.

Chapters 9, 20 and 24 in Volume 01 summarize the main findings of each section, while Chapter 25 offers final concluding remarks. A glossary and the bibliography are also included at the end of Volume 01.

Specific methods are further described in the introduction of each section, both in Volume 01 and 02. In addition, some of the basic information provided in this introductory chapter is repeated in the front matter of Volume 02, to facilitate its comprehension. Volume 02 also contains the Appendices.

1.6.3 ATTITUDES

Questioning the Everyday

The emergence of the concept of the infra-ordinary in architectural discourse during the 1960s was related to a critical revision of the urbanism of the CIAM. It was consolidated around the concept of *habitat*, which eventually led to the demise of the CIAM altogether. This revision of modern urban paradigms was part of a larger reaction to worldwide structural changes: the emergence of the consumer society, the rise of neoliberalism, the establishment of the modern state and the crisis of Marxism, among others.

Before this scenario, critical voices had called for the reappropriation of everyday life as an alternative. Henri Lefebvre claimed that everyday life needed to be emancipated from capitalist alienation, Bernard Rudofsky reformulated the vernacular as a model for a new way of life, Allison and Peter Smithson developed the *'as found'* attitude to generate an urbanism based on existing situations and Robert Venturi and Denise Scott-Brown challenged modern paradigms about ornament and the relationship between form and function through their study of Las Vegas strip buildings.

In a short piece called *'Approches de quoi?'*, Georges Perec reflected on the need to maintain the sense of surprise before reality, and to question the things to which we seem to have become accustomed, so that we can discover the answer to crucial questions: *'Where is our life? Where is our body? Where is our space?'* He argued that the essential questions were those that seemed trivial and futile, since it was by questioning everyday habits that one could *'speak of what is, of what we are'* (Perec, 1989). The author's ability to reexamine the infra-ordinary was due to a conscious attitude of estrangement before everyday life. He adopted techniques designed to alienate himself by developing new ways of looking. From that perspective, the constrained writing techniques he developed as part of the *Ouvroir de littérature potentielle* (Oulipo) were nothing more than strategies to maintain this estrangement from everyday life.

On Being An Outsider

The largest handicap for a Western visitor facing Seoul's mass housing estates is to avoid judgments and preconceptions based purely on formal appreciations. Forms may be shared globally, especially since the advent of modernization, but the socio-historical, economic, political and cultural meanings attributed to them remain particular to a specific locale.

At the same time, a foreign observer of the phenomenon of mass housing in South Korea maintains a certain leverage due to her/his alienated position before this everyday reality. As John Habraken wrote, *"Our subject, then, is not architecture, but built environment. It is innately familiar. Anew, we observe what always has been with us – not to discover, much less to invent, but to recognize"* (Habraken, 2000, p. 2).

Suspended Judgment

The concept of 'suspended judgment' was introduced by Rem Koolhaas in the 1980s as a strategy to confront architects with realities that did not conform to established prejudices and those the discipline tended to exclude. Koolhaas argued that, while the consumer society may have seemed alienating, architects were forced to confront it, since consumerism increasingly permeated people's everyday lives. Thus, Koolhaas opened a series of taboo areas to critical discourse. The strategy of suspended judgment, conceived as ethics of perception, allowed architecture to face reality instead of repressing it and expanded the scope of action of architects[1] (Druot, Lacaton, & Vassal, 2007, p. 15).

1 See 'D. Multiple modernities as a field of research for architects' in subchapter 9.1, Volume 1.

1.6.4 TOOLS

On Drawing

The research reassesses the role of drawing as a disciplinary tool. Drawing is not understood as a mere recording of information, but as a specific way of looking. The goal of drawing is not to produce a copy of reality. Rather, drawing is always selective: what is drawn depends not only on what is in the environment, but also on the agent that produces the drawing (Turnbull, 1994, p. 5). To draw is to make visible relationships that cannot be perceived otherwise. Re-presentation (this is, to place before someone again, to give a second, edited look, to project back onto reality) is the basis of knowledge for architecture. James Corner wrote: *"As a creative practice, mapping precipitates its most productive effects through a finding that is also a founding; its agency lies in neither reproduction nor imposition but rather in uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds"* (Corner, 1999, p. 213). The English term 'to design' hides two related but different meanings from the original French or Italian: 'to draw' (*dessiner, disegnare*) in terms of reproducing selected aspects of reality through artistic skill and 'to design' (*concevoir, progettare*) in terms of planning or outlining a form, scheme or purpose – projecting from within one's mind back to the world outside. Thus, drawing has a double function: to apprehend from what exists, in order to be able to intervene in it. Drawing as a tool is linked to the propositive nature of architecture.

A culture of looking develops through specific drawing tools: for Santiago de Molina, the plan is much more than a simple cut: *"the floor plan is also an economic system of spatial relationships and a political system established among the different rooms"* (de Molina, 2016). Of course, this is not a naive activity. Drawing is fundamentally a political act. It allows wars to be waged and the delimitation and control of territories and their populations. However, it also *"may emancipate potentials, enrich experiences and diversify worlds"* (Corner, 1999, p. 213). The production of knowledge through drawing characterizes the discipline of architecture.

The Comparative Method

Comparison is an elemental form of analysis. The initial description of selected cases leads to the establishment of similarities and contrasts among them. This, in turn, allows for the testing of hypotheses and eventually to the inductive discovery of new hypotheses and to theory-building. When cases are selected from different periods, comparison can contribute to the establishment of patterns over time and thus to the definition of processes of evolution and phasing. A fundamental aspect of the comparative method is the selection of variables to be compared from each case, since different approaches to the same objects of study may lead to radically different conclusions.

The Travel Book

The rediscovery of the ordinary through the critical distance afforded through a process of alienation finds its methodological tool in the travel book. Its format as a guide, manual or catalogue allows for the sorting and classification of findings from everyday life, transforming them into reappropriations of the ordinary. These classifications allow for comparisons and the drawing of conclusions. The conclusions can inform the formulation of new theories. Finally, these theories about the extant can be explored creatively in different contexts. Moreover, the outside perspective of the travel book implies that descriptive instruments need to be developed that are appropriate to the object of study. Afterwards, these instruments can become tools for producing new knowledge rather than merely forms of representation.

1.7 LITERATURE REVIEW

Apat'u tanji are an icon of contemporary Korean society. As such, they are the object of extensive cultural production, and have been studied and continue to be studied from different fields of research including housing policy, anthropology, sociology, architecture, urbanism, real estate and economy.

This review does not attempt to include all the available literature on the topic of mass housing in Seoul. It focuses on key references, mainly from the disciplines of architecture, urbanism and urban sociology. The literature is organized in themes, from specific to generic. This allows patterns to be identified, as well as research gaps and possibilities for new areas of investigation.

Based on the literature review below, the research seeks to contribute to extensive sources in Korean with the development of a methodology within the discipline focused on the study of urban form and growth through the interpretation of urban elements at different scales (streets, plots and building types), and the processes that direct their development over time. This method also attempts to reassess the role of drawing as a tool to produce knowledge[1].

The research also strives to fill the gap between the amount of literature in Korean and the sources that are available in English, since there is limited urban/architectural research produced for international audiences about the Korean mass housing phenomenon. This is for several reasons:

- Other Asian developmental societies with a high ratio of mass housing, such as Singapore and Hong Kong, use English as their main language. Their public agencies are more involved in the development of mass housing, so more research is produced.
- Due to the sheer scale and speed of its development, mass housing in China has been the object of numerous international studies.
- Mass housing in Japan is less well-known than the above cases, but due to its longer history, the active role of public agencies and their involvement with academia, it has also received international attention.
- Mass housing in South Korea since the late 1980s has mostly developed from the private sector. There has not been a public entity nurturing research, design and innovation from an urban and architectural perspective. This has also resulted in little academic involvement. Moreover, it is still a recent phenomenon.

Finally, the research also attempts to situate the emergence and evolution of *apat'u tanji* in Seoul within the international development of mass housing by tracing its main theoretical, spatial and technical influences and identifying its most relevant contributions.

1 See '1.6 Methodology' earlier in this chapter.

1. ON SEOUL

1.1 Mass Housing in Seoul

There is extensive literature about the topic of mass housing in the Korean language. It can be grouped into two main categories: publications by the Korean Housing Corporation (대한주택공사 [KHC], subsequently the Korean Land and Housing Corporation) or texts by scholars. Publications by the public housing authority are a good source of facts, data, policy, legislation and graphic material, but lack perspective and interpretation. They became less relevant once responsibility for the development of mass housing had shifted to the private sector by the late 1980s. The KHC has published annual statistics books (토지주택통계편람) and compilations (such as 대한주택공사주택단지총람 – *'Korea National Housing Corporation Housing Complex Summary'*) of a strictly documentary and statistical nature. They are a good source of information about the public sector, although they focus on quantitative aspects and need to be interpreted (Korean Housing Corporation, 1978, 1979, 1981, 1987). Between 1959 and 1980, the KHC also published the 주택 (Chutaek – 'Housing') magazine to popularize the new mass housing lifestyle. The magazine featured articles about case studies from abroad, modern construction technologies and materials, housing policy, etc. (Korean Housing Corporation, 1959-1980).

The most comprehensive works by architectural scholars adopt a multidisciplinary approach, with contributions by a variety of experts, each dealing with a specific topic. The volume edited by Kang Bu-seong (1999) addresses planning theory, the morphology of mass housing estates and building types. It is already twenty years old, so it does not include the latest developments. The work in three volumes edited by Cheong Nam-il (2008-2010) describes the transformation of residential environments in Korea due to the process of modernization from the end of the nineteenth century until 2000, and sets an important precedent in establishing the social implications of the spatial aspects of residential architecture. The catalogue of the exhibition at the Seoul Museum of History curated by Kang Hong-bin (2014) addresses the role of mass housing in Korean society through an extensive display of original materials in chronological order.

There is also a wealth of literature on specific aspects of the mass housing phenomenon. The thesis by Kim Kyu-hyung (2006) on the thirty-two Citizen Apartment projects built by the City of Seoul at the end of the 1960s claims the project was successful in familiarizing the middle class with the typology of collective housing, and thus established a precedent for the *apat'u tanji* developed during the following decade. Lim Seo-hwan's work (2005) provides a detailed account of the evolution of housing policy and its underlying political economy. Professor Park Cheol-su has written extensively about the topic. His work from 2006 suggests that mass housing in South Korea is a political legacy from the Park Chung-hee era, when modernization was instrumentalized to legitimize the authoritarian rule. The book also describes changes in perceptions of apartment complexes in popular culture over the years. Jang Rim-jong and Park Jin-hee (2009) studied the stand-alone apartment buildings built by the private sector during the 1960s and 1970s as precedents for the later development of apartment complexes.

Since the 2000s, a strong revisionist trend has surfaced that criticizes the impact on the city of implementing mass housing in previous decades: monotony of the urban landscape, privatization of the city, social segregation and a lack of relationship with the context, etc. among other factors. Revisionists call for housing policy reform. Relevant examples of this trend are the works by Park In-seok (2013) and Park Cheol-su (2013).

While mass housing in other East Asian developmental societies has attracted more international attention, there are not many sources in English about the Korean mass housing phenomenon. They can be grouped into several categories:

The first category is chapters of books addressing wider issues by Korean authors, written in English. An extensive chapter entitled *'Changes in the Residential Features of Seoul'* by Sohn Sei-kwon in a book edited by the Seoul Development Institute (2003) singles out the rapid pace of urban development, the housing shortage and a combination of top-down policy together with the private developers' pursuit of economic profit as the main drivers of the adoption of mass housing. In addition, chapters 3, 4 and 5 in Jung In-ha's ambitious *'Architecture and Urbanism in Modern Korea'* (2013) focus specifically on the ambivalent relationship of Korean society with modernization as a process imposed by foreign powers, and its effects on the city and on residential environments. The publication includes a wealth of relevant, redrawn graphic information and encompasses a wide range of scales, from urban planning to building typology and unit layouts.

There are also a few important precedents of doctoral theses from urban and architectural disciplines. One is a recent thesis on urban and regional planning by Soe Won-hwang (2018), which adopts a morpho-typological approach to develop a taxonomy and vocabulary to describe the urbanism of mass housing in Seoul through the use of GIS and other graphic software. Kwon Hae-ju's doctoral thesis on architecture (2017) is based on the hypothesis that mass housing complexes in Seoul prevent modernization of the traditional residential quarters around them due to their isolation, and attempts to reevaluate the structure of these urban fabrics by outlining strategies to integrate mass housing in them. Marie-Hélène Fabre's thesis from 1993 is also an important reference on the development of mass housing by the administration through the Korean Housing Authority.

Mass housing in South Korea has received more attention from the social sciences internationally. Some key sources were developed as academic theses. For example, Kim Jie-eun's (2010) doctoral thesis in urban planning studies the extensive gentrification process led by the Seoul Metropolitan Government since 2002 with the 'New Town Initiative'. It is a valuable source to understand this process, in which *apat'u tanji* are a key element. Valérie Gelezéau's doctoral thesis (2003) was considered a groundbreaking contribution in the field of urban sociology. Her main argument is that apat'u tanji not only are the result of a process of state-led economic improvements, but also play an active role in the formation of a new urban middle class of skilled workers who support the developmental regime. According to the author, mass housing estates in Korea are a habitat, a real estate investment and a symbol of progress on the social scale. Similarly, Denise P. Lett's anthropological study on the modern Korean urban middle class highlights the role social and cultural characteristics have played in the country's economic growth (1998). The book emphasizes

the innate tendency of Korean people to acquire social status as the engine of this growth and includes mass housing as one of the main instruments for the pursuit of social status. A relevant contribution by Lee Hyo-jae (1971) is a study of the living patterns and needs of city dwellers geared towards informing the urban planners who would address the challenges of explosive urban growth in the capital. It focuses particularly on the needs of middle-class residents, as this group was the most numerous at the time and it was considered that it would continue to be in the future. The book was based on field research in three neighborhoods representing a variety of middle-class living patterns. Interestingly, one of the main observations was that middle-class residents did not appreciate apartment complexes, as they were associated with social housing designed to resettle squatters.

1.2 Seoul Urbanism

The narrative of the modern urban history of Seoul tends to adopt a historical perspective that focuses on how the city had to cope with the extreme conditions of the economic and demographic boom, the housing crisis and a lack of resources and expertise. However, there is little literature on the conceptualization of Seoul as an urban model or associated theoretical paradigms. Some of the key sources in this area are given below.

The volume edited by Kim Kwang-joon and published by the Seoul Development Institute (2003) is a comprehensive account of the urban development of Seoul during the twentieth century, organized into chapters that focus on specific topics: transportation, housing, provision of infrastructure, open spaces, colonial planning and urban renewal, among others. The underlying theme is the unprecedented speed of development to cope with the demographic explosion during the developmental period, which makes the city a valuable reference in terms of the management of accelerated growth, density and urban complexity. Similarly, Kim Joo-chul and Choe Sang-chuel's book (1997) offers a general overview of the city's modern urban development, especially since independence from Japan at the end of World War II. The main narrative presents the contemporary city as the built result of rapid urban and demographic growth in a country lacking know-how and resources. The more recent work by Jung In-ha (2013) is a rigorous, extensive, ambitious quest to identify an autochthonous urban and architectural identity within the framework of modernization as an ideology.

In addition to these comprehensive narratives, some analyses focus on specific aspects of the urban development of Seoul. Below are some key sources related to issues relevant in the research.

The catalogue of the South Korean pavilion at the Venice Biennale, edited by Kim Sung-hong (2016), employs the concept of 'floor area ratio' as a simple and powerful lens to approach an understanding of Seoul's urban milieu. It addresses the commodification of space as real estate value, high residential density and the implications for the architecture profession. Jung Sang-hoon's 2014 article introduces to English-speaking audiences the work of the Housing, Urban and Regional Planning Institute (HURPI) under the direction of American planner Oswald Nagler during the decade of the 1960s, as a precedent for the formation of a local planning and urban design culture in Seoul. The volume published by the Seoul Development Institute in 2009 is a study on the evolution of the urban form of the capital through Geographic

Information Systems (GIS). Beyond a purely morphological understanding, the objective was to understand problems and to see potential for the future development of the city. Kim Jung-in's doctoral thesis in architecture (2008) discusses the mobilization of development, modernization and urbanization as national agendas that legitimized the authoritarian regime and the resulting urbanism through the analysis of four large-scale urban projects of the developmental era.

1.3 The Developmental State and the Built Environment

The developmental state, a complex socioeconomic topic, has generated extensive literature in the social sciences. What is not discussed much is its impact on the built environment as a topic of research. Below are some key sources on the concept and others that examine some of its spatial implications.

The compilation edited by Meredith Cumings-Woo (1999) is a fundamental source to understand the theory of the developmental state, including one chapter by Chalmers Johnson, author of a landmark interpretation of the topic based on research at the Japanese Ministry of International Trade and Industry (MITI) (1982). The volume by Kim Byung-kook and Ezra F. Vogel (2013) traces the transformation of South Korea from a misery-stricken country at the outset of the Korean War into an economic powerhouse under the modernization project initiated by the authoritarian rule of General Park Chung-hee. Carter J. Eckert's book (2016) places the origin of the country's radical socioeconomic transformations in the Japanese military culture and ethos that shaped Korea's post-war generation of military leaders, especially during their participation in the colonization of Manchuria. Louise Young's account of the Japanese colonial occupation of Manchuria (1999) argues that the construction of empire on the mainland was a testbed for the modernization of Japan.

2. ON ASIA

2.1 Mass Housing in East Asian Developmental Regimes

There is not much literature about the shared experience of East Asian developmental regimes in mass housing as a disciplinary topic. Similarly, there are few sources on the influence of Japanese post-war mass housing and new towns in South Korea, in spite of the fact that the Korean Housing Corporation was originally founded as part of the Japanese Housing Corporation during colonial times, and the evident role of Japan as a developmental model due to its head start after World War II. Some relevant sources are given below.

Michelle L. Hauks's (2015) master's thesis on the History of Architecture constitutes a rare and valuable document that situates the Japanese post-war new towns of Senri and Tama in the global context of modern mass housing, city planning and new town movement for the English-speaking audience. Authors John Doling and Richard Roland (2014) described the East Asian developmental approach to welfare provision and the role of the administration and housing policy within it. Their contribution is fundamental to understand differences with Western welfare systems. The book by Alan Smart (2006) describes the role a series of fires in squatter settlements in Hong Kong under British colonial rule had in initiating the public mass housing program which is still operative today. An article by Park Bae-Gyoon (1998) describes differ-

ences between the roles of the South Korean and the Singaporean administration in housing policy, and how they have affected social development.

2.2 Modern Architecture & Urbanism in East Asia

The following texts outline the existence of contemporary urbanism specific to East Asia. They suggest that given the specific conditions of accelerated economic growth, high population densities and availability of technical and conceptual resources, urban development in East Asia is not just a reiteration of borrowed global modern models but rather a new urban phenomenon in its own right, related to developmental economic policies. The topic has not been fully researched and conceptualized yet.

On various occasions, Peter G. Rowe attempted to identify a modern urbanism specific to the 'Four Asian Tigers' (that is, East Asian countries with spectacular economic growth since the 1970s). His 2005 book addresses the commonalities and differences in the urban development of the countries. In his 2011 volume, he developed a graphic analysis methodology to describe new typologies of public structures and urban environments in the region. One of the main conclusions is that new urban and architectural developments showcase a fusion of global and local influences.

In a 1997 article, Rem Koolhaas mentioned the urbanism of the Asian miracle as one the referents of the 'Generic City'. The author described this urbanism as a conscious effort to create sameness, a product of the diffusion and universalization of overly simplified modern architectural and urban models, emptied of their original social goals. He also related it to authoritarian regimes.

3. ON MODERN HOUSING

3.1 The Garden Cities & New Towns Tradition

There is extensive literature on the Garden City movement and its influence on modern urbanism. Key literature references on the development of the mass housing model in Seoul are the texts of Howard (1898), Unwin (1909) and Perry (1929). In addition, two indispensable references are the proposal for the Greater London Plan by Leslie Patrick Abercrombie (1944) and the planning for Hook New Town by the London County Council (1961).

3.2 The Functional City & Mass Housing

There is extensive literature on this topic. A selection of primary sources relevant to the development of the research are the works of Garnier (1917), Hilberseimer (1927), Teige (1932, trans. 2002), Le Corbusier (1933, 1943) and Sert (1941). The acts of CIAM II on minimum dwelling and CIAM III on rational land development (reproduced in Aymonino, 1971) are also pertinent.

There is also a wealth of secondary sources. Some key works are: Aymonino (1971), Mumford (2000), Somer (2007), Henderson (2013), as well as volumes edited by Huse (1987), van Rossem (1998), Moya (2008) and van Es, Harbusch, Maurer, et al. (2014).

3.3 The Statement on 'Habitat' as a Complement to La Charte d'Athènes

The separation of Team X from CIAM and their work thereafter has been studied quite extensively. The following references are relevant because of their specific focus on the formulation of the concept of habitat as a watershed moment in the development of post-war urbanism: Bodiansky (1953), Bakema, van Eyck, van Ginkel et al. (1954), Alison & Peter Smithson (1960), Van den Heuvel, Risselada, Bosman, et al. (2006), Dainese (2013) and Pedret (2013).

3.4 The Legacy of Modern Mass Housing

Mass housing has been one of the main topics of modern architecture, and thus it has generated a considerable amount of literature. Produced in contexts where mass housing was implemented at an earlier stage than in South Korea, the works below are selected because they look back at the phenomenon from the perspective of time and can either interpret it, offer a comparison among different locations, or propose strategies for intervention or alternatives. They are relevant because they help situate mass housing in Seoul within a wider spectrum.

The volume by Florian Urban (2012) revisits the thesis of a previous work by Dufaux & Fourcaut (see below), which states that despite its universalizing ambition, mass housing has fulfilled very different social agendas in different countries. From a revisionist perspective, the author argues that the perceived 'success' or 'failure' of the model depends not only on spatial or design issues, but also on a complex network of variables including policy, social networks, maintenance and other cultural, social and political issues. The compilation by Druot, Lacaton & Vassal (2007) summarizes the authors' experience in the renovation of mass housing projects in France and proposes a radical reevaluation of mass housing projects to adapt them to contemporary lifestyles. In so doing, the authors propose a new sensitivity towards modern heritage. Frédéric Dufaux and Annie Fourcaut edited in 2004 a collection of articles by geographers, historians, architects and other professionals on the role of mass housing in different countries. The thesis of the book is that, despite the globalizing agenda of the housing models developed by the CIAM and formal similarities, their adoption in different national contexts reflects different social agendas. Peter G. Rowe (1995) authored a generalist, critical view of mass housing of the Modern Movement in the West, with a focus on the interwar period in the 1970s and 1980s, up until the end of the second industrial revolution. John N. Habraken's influential 1961 text was divided into two parts. The first reflected wider criticism of modernist mass housing due to its lack of adaptability to the needs of residents and to changes in lifestyle over time. In the second part, the author suggested that responsibility for the provision of housing should not depend on society in general, but on the individual. He proposed the 'Open Building' system, in which the designer would provide an infrastructural, communal residential 'support' that users would customize with 'infills', allowing for unforeseen adaptations over time. The 1988 book by Bruno-Henri Vayssière is a work of synthesis aimed at understanding the phenomenon of mass housing in France mainly from social, technical and aesthetic dimensions. The text reflects on modernity as a new form of management, both of objects by people and vice-versa. According to the author, mass housing estates were the most relevant representatives of this modern culture. The volume by Edmond Preteceille (1973) made an important contribution at a time when the housing estates around Paris

had already been studied in depth, by presenting them not as formal objects, but as social objects. It sought to understand the phenomenon of mass housing from the place it occupied in the inhabitants' way of living and within production processes, and linked mass housing to what the author called 'the socialization of consumption'.

3.5 Modern Housing & The City

Within the wide range of literature on housing, this selection of individual contributions with relevant approaches to the topic particularly influenced the research.

The book by Amador Ferrer (1996), based on his doctoral thesis written twenty years earlier, proposes mass housing in Barcelona as a lens to understand the shift of scale from the industrial city to the metropolis. According to the author, mass housing was an instrument for both the management and the execution of this shift in scale. The book highlights the lack of political will at the time to understand the problem beyond a quantitative perspective, which prevented the emergence of a genuine mass housing policy. Ferrer's work is exemplary in its methodological rigor and in initiating a discussion about mass housing at a time when the topic was either largely ignored or taken for granted in the disciplines of architecture and urbanism. Richard Plunz's exhaustive work (1990) traces the evolution of housing from the mid-nineteenth century to the 1980s in New York. The book examines the complex roles of planning, real estate development, housing reforms, construction regulations, and the evolution of technology and government policies in the emergence of the typologies that characterize the residential fabric of the city. In her 1981 volume, Gwendolyn Wright uses the analysis of thirteen popular typologies from the history of housing in the US to discuss controversies surrounding the concept of 'home' that are mainly related to how people lived in their homes as opposed to what was proposed for them.

3.6 Another Modern Tradition

Despite the unifying and universalizing scope of some tendencies of modern architecture, it remained a diverse, heterogeneous project. In particular, the texts by de Solà-Morales (1989) and Wilson (1995), written at a time when the modern legacy was under review, outline this alternative modern tradition in urbanism and architecture respectively.

4. THEORY

4.1 Modern Urbanism and Colonialism

The relationship between imperialism and modern urbanism as an instrument of control and power has been the object of a body of research. Some of its key sources are: Wright (1991), Crinson (2003), Eleb & Cohen (2004) and Overy (2005). Within the context of Seoul, relevant references are Jeong (2001), Henry (2008) and Ishida & Kim (2014).

4.2 Diffusion of Modern Planning & Architectural Ideas

The production of urban and architectural knowledge through the displacement of ideas in different cultural contexts constitutes a powerful research agenda, particularly in relation to the universalizing aspirations of modernity. Some key references are Tanizaki (1933), Said (1983), Ward (2000), Hein (2003) and Lu (2006).

4.3 Appropriation of Modern Architecture by Market Forces

This selection of references addresses the ambivalent relationship between modern architecture and power: Lefebvre (1974), Tafuri (1976), Habermas (1989), Frampton (1992) and de Graaf (2015). As with the relationship between the developmental state and the built environment, this is a topic of research that has not been explored in enough depth in the Korean context.

4.4 Everydayness in Architecture & Urbanism

From embodying criticism of the functional aspect of modern architecture and urbanism since the middle of the past century, the everyday has become a powerful yet elusive lens for the production, occupation and criticism of architecture. The seminal work of Lefebvre 'Critique de la vie quotidienne' (1947) has had a long-lasting influence in other fields. Particularly relevant to the research is the work of de Certeau (1980) and Perec (1989). Lefebvre has also had an enduring impact on the architectural discipline that is renewed periodically: Boudon (1972), Wigglesworth & Till (1998), Hughes & Sadler (2000), Jouet, Walker, Virilio et al. (2002), Till (2009) and Stanek (2011) have also been relevant to the investigation. The influence of Lefebvre on Venturi, Scott Brown, & Izenour's popular volume (1972) is not well-established, but it is also a relevant reference on the topic.

4.5 Post-Colonial Theory Reframing Modernity in Asia

A growing awareness that challenges the cultural hegemony of the West is emerging from post-colonial thought in the social sciences. It proposes the existence of different modernities, rather than a unique, Western one that has been unidirectionally imposed on the rest, which are considered the 'periphery'. The main references are Chakrabarty (2000) and Chen (2010). The work of Lim (2008) reflected this awareness in the field of architecture and urbanism.

4.6 Mass Housing and the Neoliberal Turn

The presence of housing in the discourse of architecture has diminished considerably since the 1980s, with the decline of the welfare state and the emergence of neoliberal policy. Nonetheless, since the world financial crisis of 2008, housing has received renewed interest from the discipline as it is trying to come to terms with the realization that the current crisis of affordable housing and the commodification of the urban environment are some of the main drivers of the neoliberal agenda. The pioneering discussion of the 'housing question' was posed originally by Engels in a series of articles (1872–1973). Harvey (2005) provided a succinct description of the neoliberal turn. Key references on the discipline's renewed interest in housing are Brenner & Campbell (2014), Martin (2015), Madden & Marcuse (2016), and Mota & Allweil (2019).

SECTION 1 / CONTEXT

Figure B-1. 'Plowing Outside of Apkujeong'
Construction of Hyundai Apartments in Apkujeong, Seoul, 1978.
Photograph by 전민조 (Jeon Min-joo).

Figure B-2. Vall d'Hebrón, Barcelona, summer of 1977.
Photograph from the book *'Els barris de Barcelona'*, Alberch Fugueras (1997).

"What if it is precisely the petty bourgeois who is alive with intimations of a colossally new, collective, antlike heroism? It will be called rationalized heroism, and greatly admired."

Robert Musil (1830-42) *The Man Without Qualities.*

"Modern bourgeois society, with its relations of production, of exchange and of property, a society that has conjured up such gigantic means of production and of exchange, is like the sorcerer who is no longer able to control the powers of the nether world whom he has called up by his spells."

Karl Marx & Friedrich Engels (1848) *Communist Manifesto.*

"The majority of Koreans now live in a dwelling called APT (apartments), or if not, desperately hope to do so."

Kim Kwang-soo (2005) 'The Other Public Space: The Korean '-Bang' Culture'. In Kim Sung-hong & P. Schmal Cachola (Eds.), *Germany - Korea Public Space Forum* (pp. 67). Frankfurt: Enter Korea.

SECTION 1 / CONTEXT

Taken in the middle of the 1970s in Seoul and Barcelona, the two photographs that open up this chapter capture the decline of traditional agricultural lifestyles in the outskirts of both metropolises, in stark contrast with the advent of a modern way of life heralded by the apartment buildings in the background.

The apartment blocks look strikingly similar: we can make up in both cases a concrete structure that allows for horizontal bands of windows and stacked balconies that reveal the location of the living rooms facing south.

At the same time, despite their physical similarities, the fates of both apartment buildings are radically different. The Hyundai Apartments in Apkujeong were the symbol of a shift in mass housing policies in Seoul towards the private sector, catering to the growing urban middle class. With its advanced amenities and utilities, the estate would become the paradigm of the residential choice of the Korean upper middle class. Over time its remote location on the banks of the river, which for centuries had been the southern boundary of the capital, became a central location in the modern metropolis. Today, the estate stands as one of the most expensive pieces of real estate in Seoul and exemplifies the intertwined processes of gentrification and social segregation mass housing complexes have brought to the city.

The apartment block in Vall d'Hebrón, Barcelona, was part of a social housing project targeted to the working classes. The lack of amenities, infrastructures and services, and its isolation from the rest of the city loomed over the development for decades. Nowadays the estate has finally been integrated to the metropolitan area, thanks to the infrastructural improvements brought by the 1992 Olympics. Despite the over-densification of the initial schemes, the tenant mix and the range of unit types ensured a sustainable social environment.

STRUCTURE AND METHODS

Notwithstanding the universalizing intentions of the Modern Movement, the implementation of mass housing has obeyed radically different social agendas in different locations. The tension between global ideas and local identities has been a constant in the diffusion of modern architecture. This first section situates the process of implementation of mass housing in Seoul within its social, political and economic milieu, in order to better understand the powers and ambitions that shaped it and to highlight its similarities and differences with other settings. The goal is to provide the necessary context within which to interpret the formal analysis developed in the remaining three sections of the research.

This is done through the synthesis of relevant literature on the different topics. Chapter 2 places South Korea as part of the East Asian developmental estates which emerged after World War II, with a shared experience of fast industrialization, economic growth and urbanization resulting from a modernization project initiated by authoritarian governments. Their particular approach to welfare has led to distinct housing policies which set developmental regimes apart from their Western counterparts. The chapter also differentiates South Korea from other developmental regimes due to the particular role of the administration in the provision of housing. Chapter 3 expands upon the impact the developmental regime had on the spatial transformations of the country through a process of forced modernization guided by a combination of scientific management and strong military ethos. It also highlights South Korea's geopolitical advantage due to the country's position at the frontline of the Cold War and the ex-colonial relationship with Japan, which facilitated economic and military support, and the transfer of know-how. Chapter 4 takes on a more statistical approach to describe the demographic explosion of Seoul during the second part of the twentieth century, the chronic housing shortage looming over the capital since the 1920s, the evolution of housing provision, and the shift towards the construction of mass housing. Finally, Chapter 5 characterizes mass housing as a social contract among the three main social actors during the developmental period: the authoritarian state, the construction companies within large family-owned industrial conglomerates (*chaebol*), and the new urban middle class. Due to its documental character, this section has no correspondence in Volume 02 – Annexes.

CHAPTER 2
INTERNATIONAL CONTEXT

2.1 A DIFFERENT PERCEPTION OF MASS HOUSING IN SOUTH KOREA AND IN THE WEST

In the West, mass housing estates are seen as an evidence of failed policies on housing. They were generalized especially after World War II as a solution to deal with post-war reconstruction and fast demographic changes. By planning the city in relatively large, unified portions, modern housing estates brought about a change of urban scale from the industrial city to the metropolis. However, soon problems with their integration within the traditional city and the extended region; the lack of infrastructure and services; inadequate maintenance programs and transportation and social marginalization rendered them as a source of social malaises. As a result, from the 1960s on and especially during the 1970s, mass housing estates drifted into a crisis in Europe and in the US, together with the urban ideas of the Modern Movement. In a few decades, Mass housing in the West quickly went from a utopian dream to a heterotopian nightmare.

Criticism to the functionalist principles of *'La Charte d'Athènes'* and to mass housing inspired by the CIAM came from a variety of fields. In 1960 the members of the Team X met formally for the first time in Bagnols-sur-Cèze. Their conflicts with the older generations of CIAM would eventually culminate in the dissolution of the congresses altogether. The same year, Kevin Lynch published *'The Image of the City'*, a critique of the modern urban paradigm. In 1961 a symposium held at the MoMA in New York raised the question: *'Modern Architecture: Death or Metamorphosis?',* while in the same year Jane Jacobs published *'The Death and Life of Great American Cities',* a seminal piece in the fight against modernist urban renewal in the American context. The colossal Bijlmermeer estate in Amsterdam was built from 1966 on a polder in the outskirts of the capital, and already in 1970 a study was commissioned to evaluate the problems its demolition would entail. On March 16th, 1972 began the famous demolition of 33 of the buildings in the Pruitt-Igoe complex in St. Louis, which led to Charles Jencks declared the date as *'the day* Modern *Architecture died'*[1]. In 1973, Olivier Guichard, French Minister of Equipment, permanently prohibited the construction of housing estates with more than 500 units (Chemetov, 2004, p. 8). The dystopian nature of mass housing estates has been explored and fixed in the collective imaginary with films such as *'Alphaville: une étrange aventure de Lemmy Caution'* (Jean-Luc Godard, 1965) or *'A Clockwork Orange'* (Stanley Kubrick, 1971).

Meanwhile, the Mapo Apartments in Seoul, the first mass housing estate in South Korea, started their construction in 1962 as a built manifesto of the modernization efforts that would legitimize the new regime of General Park Chung-hee. He had accessed power through a coup d'état the year before and was determined to lift the misery-stricken country after the Japanese colonization

1 *"Myth has it that modernism ended at 3.32 pm on 15 July 1972, at the point when a clutch of high-rise residential blocks in St Louis, Missouri, were dynamited – an act of destruction which has been taken to signal the bankruptcy of both the modernist project and State-sponsored mass-housing."*
(Hughes & Sadler, 2000).

(1910-1945) and the Korean War (1950-53). In the opening ceremony for the finished housing complex, General Park declared:

> *"Korea has been emancipated from the feudal lifestyle marked by the permanence of rituals transmitted from antiquity; on a day like today I am reassured that the adoption of a collective lifestyle, by allowing Koreans to save time and money, will help improve the living conditions and the culture of the people".*
>
> Park Chung-hee, inaugural speech for the Mapo Apartments, 1964 (Quoted in Gelezéau, 2003, p. 191).

The estate became a precedent for a mass housing policy that quickly managed to overturn the traditional preference for single-story housing in the capital. Between 1975 and 2010, mass housing estates made up for 58% of the housing construction in Seoul, with a total of 1,540,002 units built during the period (Seoul Development Institute, 2005). It has been estimated that in 2013 the city's housing estates were home to 1,284,359 units, where 53% of the population lived[2].

2.2 EAST ASIA AND THE DEVELOPMENTAL STATE

The Western perception of mass housing as a failed project is diametrically opposed to its perception in East Asian developmental estates with vigorous economic growth during the second half of the twentieth century: Hong Kong, Singapore, Taiwan, South Korea and China[3].

Until relatively recently, modernization had taken place in the West, and to a lesser extent, in the countries of the former Soviet Union. Japan was the great exception in East Asia as it began its modernization process after the Meiji Restoration in 1868 and especially before and after World War II. By the 1970s, however, this situation began to change dramatically when the so-called *'Asian Tigers'* came on stage: Hong Kong, South Korea, Singapore and Taiwan. China would follow from the late 1980s, with annual economic growth of about 10% of GDP. To understand the fast pace of the economic growth in these locations, while Britain and the US took respectively 58 and 47 years to double their GDPs, Japan took 33 years, and South Korea and China have taken only 11 and 10 years (Rowe, 2005, p. 18). This phenomenon has been called the *'Miracle of East Asia',* and it has been highly conditioned by the emergence of developmental regimes.

This different perception of the mass housing phenomenon in the region is linked to a different experience between East and West of a series of related concepts:

- Modernity, industrialization and the urbanization process.
- The process of diffusion of these concepts, related to colonial and post-colonial processes.
- The delay of the modernization of these countries and regions in regards to their Western and Japanese counterparts, which has allowed them to borrow modern experiences and practices once they were fully developed.
- The role of the state in enforcing modernization process, which has been seen as a 'revolution

2 Source: Seoul Center for Housing Policy Development, Seoul Metropolitan Government, 2013 (서울특별시 주택정책개발센터장).

3 See '3.1 The Developmental State' in Chapter 3, Volume 01.

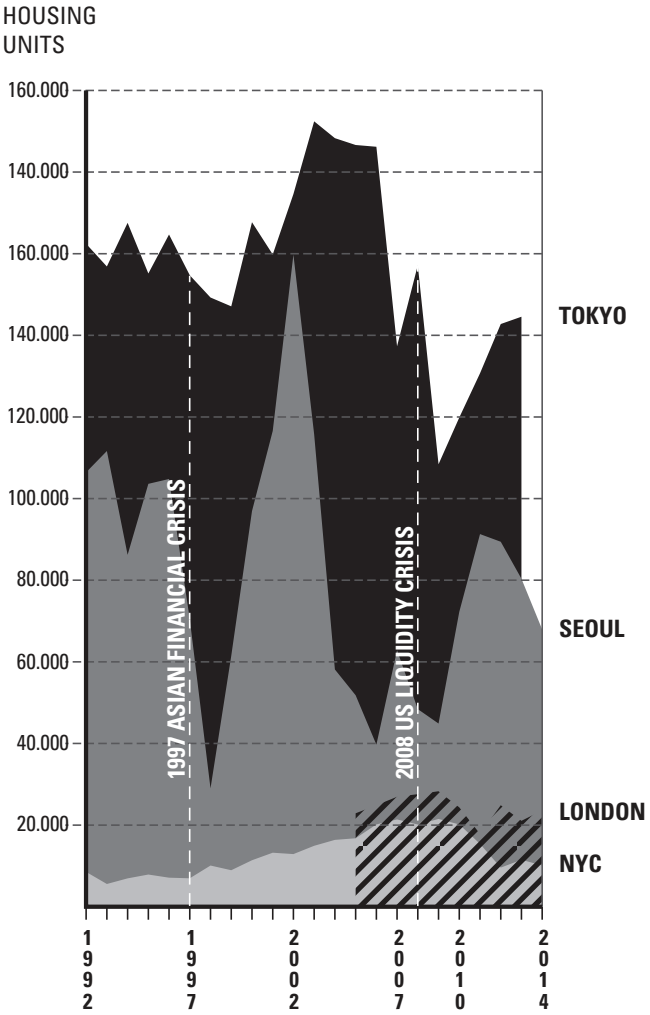
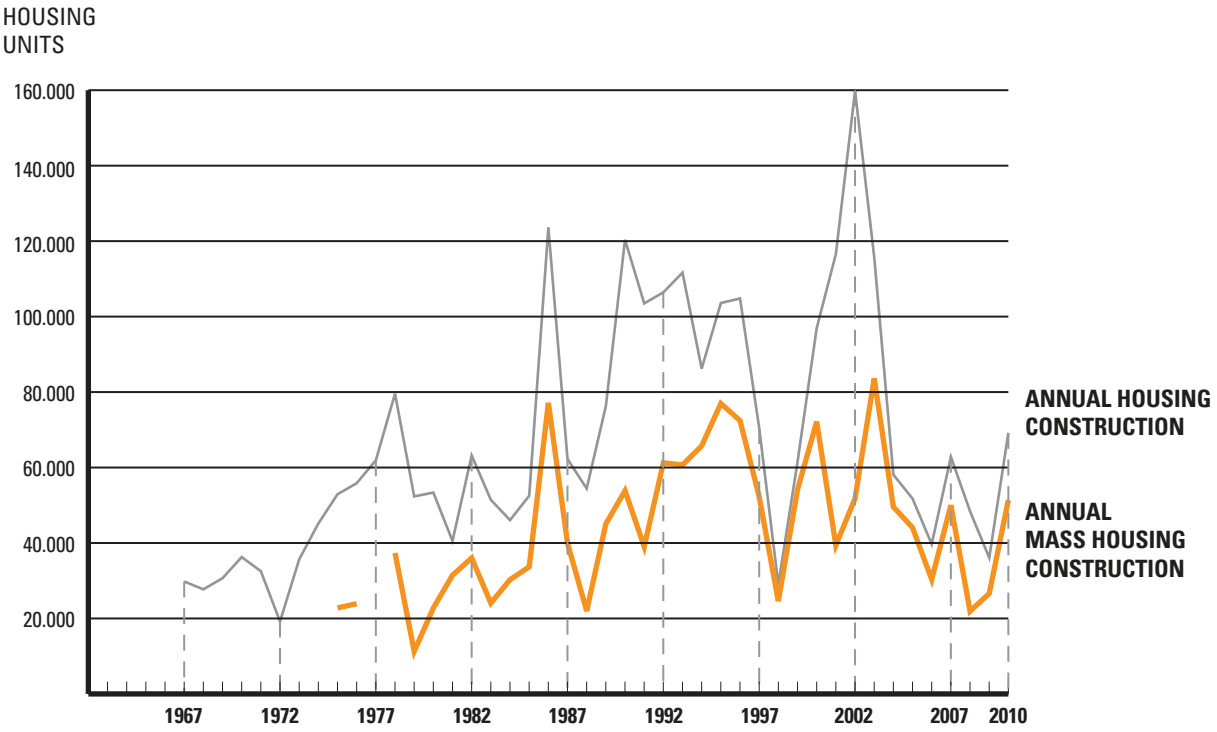


Figure 2-1. (Left) Construction of new housing in Seoul, Tokyo, London and New York, 1992-2014.
Noticeable issues in these last 22 years are the scale of production in the two Asian capitals compared to the Western ones; the instability of the production in Seoul; the impact of the 1997 Asian Financial Crisis in Asia, especially in Seoul; the tendency to grow just before the 2008 crisis everywhere; the relative recovery everywhere after 2008; and the third big drop in Seoul after 2012. Note: no data for Tokyo after 2013.
Graph by author. Sources: Seoul Metropolitan Government Statistics, *http://stat.seoul.go.kr/jsp3/;* Tokyo Metropolitan Government Statistics, *http://www.toukei.metro.tokyo.jp/tnenkan/tn-eindex.htm*; UK Government Statistics, *https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building;* New York City Department of Buildings and NYU Furman Center, *'State of New York City's Housing and Neighborhoods 2002'* and *'State of Land Use and the Built Environment 2014'.*

Figure 2-2. (Below) Evolution of total housing construction with percentage of mass housing in Seoul, 1967 - 2010.
The table reflects the steep increase in housing production by the end of the 1970s, when the urbanization of Gangnam was in its peak. The 1986 Asian Athletic Games and the 1988 Olympics also brought a huge temporal increase, and then the project for the construction of 2,000,000 housing units at the beginning of the 1990s started the construction of more than 100,000 units per year until the crisis of 1997, with a parallel increase in the proportion of mass housing. After the crisis the market recovered quickly due to the housing demand accumulated during the crisis period and also due to the renovation of the old complexes from the 1970s and 1980s. Graph by author. Sources: Seoul Development Institute, (2005). "Changing Profile of Seoul – Major Statistics and Trends". In: *Housing and Construction*, Page 3. Available at: http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp, and Land and Housing Corporation, (2010). 2010 Year Book of Land & Housing Statistics.



from above' and thus has been more pervasive and cohesive.

As Peter Rowe asserts, the overall effect of the combination of this factors is that

"The suddenness, strength and comprehensiveness of recent urban modernization in East Asia is such that the palpable results probably exceed Western experiences, even though the basic concepts were borrowed from the West, and will place the region, by and large, on a different path" (Rowe, 2005, p. 46).

2.3 HOUSING THE EAST ASIAN MIRACLE: DEVELOPMENTAL HOUSING POLICIES

Housing has been a central issue of developmental economies in East Asia, with common housing policies that differ from Western economies. Developmental housing policies have focused on the mass production of apartments for the standard modern family as a socio-economic unit. Tied to centrally planned economic cycles, developmental regimes have been able to produce housing at rates unforeseen in the West due to their power to appropriate land and to mobilize the resources of public agencies and private corporations[4]. These policies were directed towards slum clearing, the increase of land value and the promotion of fast growth. Home ownership was promoted in order to directly contribute to economic growth through the construction industry on the one hand, and on the other to support a low-taxation, low-public expenditure economy with minimum social protection measures. These policies were tightly related to a particular approach to welfare. Developmentalist social policy has not been oriented towards citizenship and social rights: instead of focusing on the vertical redistribution of wealth, the concern was exclusively economic growth and the provision of employment. The state promoted the reliance on the family as the basic social unit, through which individual welfare needs were achieved (Doling and Ronald, 2014).

In the West, mass housing is usually part of the social policies of the welfare state implemented to redistribute wealth vertically. This type of housing is therefore referred to as *social housing*, since the rent charged is based on people's needs, rather than on their purchasing power. It is therefore a decommodified product and a fixed asset. In the developmental countries of East Asia, social policies are linked to economic growth rather than to social rights, under what is known as a *productivist welfare regime*. Those countries' housing policies also include subsidized housing prices. The difference, however, is that subsidies are provided based on purchasing power, rather than on people's needs, and thus tend to support male-headed households and workers in order to achieve economic development goals. Housing acquires an exchange value. In other words, by providing access to real estate property, developmental housing policies have acted as a *'factory for the production of the middle class'* (Lee, pp. 1997, 196, 118. Quoted in Gelezéau, 2003, p. 47). Governments replaced social welfare systems (income stability, social services, etc.) with support for working nuclear families, so they could dedicate public spending on industrial and economic growth (Doling and Ronald, 2014).

2.4 UNIQUE ASPECTS OF KOREA'S DEVELOPMENTAL HOUSING POLICIES

Although the developmental housing policies of the Four Asian Tigers are similar in many aspects, in South Korea, the government plays a unique role in the way it provides housing, and therefore social welfare. Faced with a lack of capital, in the 1960s General Park's military regime began to form alliances with existing major capitalists, offering them benefits such as external aid, tax deductions and market monopolies in exchange for their strict adherence to government directives. This was how the large Korean conglomerates

4 See Figure 2-1 on page 67.

known as *chaebol* began[5]. Such was the desire to accelerate economic development that housing was not considered a pressing concern. Some attempts were made to provide public housing, but since most public spending went to infrastructure and industry (monopolized by the *chaebol*) and there was a lack of public land[6], a decision was made in 1972 to place housing provision in the hands of the private sector. In a context of limited financing for private housing, the *chaebol* were given preferential access to credit and loans, allowing them to accumulate land. Large-scale demand, the shortage of public land and the privatization of housing development therefore made real-estate investment a key component of wealth accumulation and led to a speculative boom outside the government's control.

During the period studied there was no political desire to understand the issue of housing other than as a quantitative, partial problem. Public investment was cut to a minimum, and the development of mass housing became a source of government income. The privatization of housing policies turned the apartment complexes in Seoul into a mechanism for urban speculation and made apartments a symbol of social status. This situation increased social inequalities and led to residential segregation.

5 Chaebol (재벌): A group of family-run companies that exercise monopoly control over industrial sectors and product lines. The founders of the *chaebol* were mainly from well-off landowner families. All, without exception, began as family conglomerates, and even today, 70% are still controlled by the original families. They are based on the same system as Japan's *zaibatsu*. The companies that emerged include large, internationally known producers of electronic goods and cars, as well as construction firms: LG, Samsung, Hyundai, Daewoo, Kia, etc. See: Woo, J.-E., (1991) *Race to the Swift: State and Finance in the Industrialization of Korea*. New York, Columbia University Press. and Cumings, B., (2005) *Korea's Place in the Sun. A Modern History*. (2nd Updated ed.). New York City, W. W. Norton & Company, Inc.

6 In South Korea, 73.7% of land is privately owned, and only 5% of the population owns 65.2% of all land. See: Park, B.-G. (1998) "Where Do Tigers Sleep at Night? The State's Role in Housing Policy in South Korea and Singapore". Economic Geography [Online] Volume 74, Pages 272-288. Available: http://dx.doi.org/10.1111/j.1944-8287.1998.tb00116.x [Accessed 01/28/2016].272-288

CHAPTER 3
POLITICO-ECONOMIC CONTEXT

When the military dictatorship took power in 1961, South Korea became strongly *dirigiste* as it sought to improve its economy. It was this strong directive role of the state that brought about the country's accelerated modernization and urbanization processes. Under the leadership of President Park Chung-hee, the desire for development yielded expansive spatial transformations throughout the country (J. Kim & Choe, 1997, pp. 21 and 24).

The role of the ruler in unleashing latent energies in those around him through the drive for development was one of the main topics of Goethe's *Faust*, especially in Part Two. As Marshall Berman wrote, Faust

> *"...expresses and dramatizes the process by which, at the end of the eighteenth century and the start of the nineteenth, a distinctively modern world-system comes into being.*
>
> *The vital force that animates Goethe's Faust, that marks it off from its predecessors, and that generates much of its richness and dynamism, is an impulse that I will call the desire for development.... Goethe's hero is heroic by virtue of liberating tremendous repressed human energies, not only in himself but in all those he touches, and eventually in the whole society around him. But the greatest development he initiates – intellectual, moral, economic, social – turn out to exact great human costs.... Goethe's Faust is the first, and still the best, tragedy of development."*
>
> (Berman, 1988, pp. 39-40)

The dictator adopted Faustian characteristics in his pursuit of accelerated modernization and economic improvements through the physical transformation of the country. This process has been known as the "Miracle of the Han River" or the "Big Push". To achieve this, the regime adopted economic policies that had already been widely tried and tested abroad.

The system put in place to make the development of mass housing possible must be understood within this context of unprecedented economic development driven by a military authoritarian regime, with access to external financing, and with the goal of optimizing production. Apartment complexes became golden geese, as they responded to the needs of the authoritarian state, benefited private construction companies and provided modern housing to the emerging urban middle class.

Although the comprehensive explanation of the economic policy that enabled the success of the "Miracle of the Han River" falls outside the scope of this research, this chapter exposes a series of basic principles of the developmental estate which will be helpful in order to understand the extraordinary success of Seoul's apartment complexes.

3.1 THE DEVELOPMENTAL STATE

'Developmental state' refers to a capitalist system of government that emerged mainly in East Asia in the late twentieth century in which there is strong state intervention in the economy and an extensive regulatory and planning apparatus. The system seeks to promote industrial growth; protect the public sector from the abuses of market power; and provide shared assets such as national defense and public-sector education. The main features of the system are: emphasis on market share over profit; economic nationalism (control of the national economy to regulate the free market); prioritization of technology transfer with other countries; corporatism (partnership between the state, industry and the workforce); skepticism toward neoliberalism; prioritization of economic growth over political reform; and an emphasis on technical education. South Korea's spectacular economic growth since 1962 was fueled by this kind of state, and was preceded by the forced industrialization programs imposed under Japanese colonial rule (Chang, 1999).

3.2 TAYLORISM

The network of relations that linked the need for development, the main social actors that benefited from economic growth (the state, the private construction companies and the emerging middle class), and the housing shortage brought about a series of spatial practices that led to an extremely systematized form of city-building based on the precepts of scientific management, or Taylorism.

Taylorism is named after American engineer Frederick W. Taylor, who introduced a series of measures in the 1880s to optimize industrial production through the rational management of the work process. Taylorism involved a desire to improve economic efficiency and labor productivity through analysis and synthesis; empiricism; work ethic; waste efficiency and reduction; standardization; criticism of unfounded tradition; transformation of craft production into mass production; and the transfer among workers of knowledge related to tools, processes and documentation. Taylorism was the start of a longstanding school of thought – which later included Fordism – that aimed to optimize work methods. This school of thought not only had economic repercussions, but also social and political ones (Taylor, 1911, p. 74).

Demand for precise, rapid production along with a worker shortage during World War I allowed the system to spread throughout Europe. The need to rebuild after the war and the social crisis caused by the widespread housing shortage consolidated the system's position, especially in 1920s Germany and France. This way of thinking greatly influenced the architecture and urban planning of that period, especially after the CIAM began in 1928. The reconstruction effort after World War II provided the opportunity for Taylorism to be implemented. The influences of Taylorism on the Modern Movement can be traced to the adoption of zoning as the main planning tool (related to the division of labor); the specialization of traffic; the standardization of building and prefabrication processes; the predominance of industrial construction over craft production; the rationalization of construction processes; the optimization of spatial use by defining minimum units and rationalizing

bathroom and kitchen spaces; etc. Le Corbusier's urban utopias described in his "Ville Contemporaine" and "Plan Voisin" projects were inspired by this production model.

Those in charge of the "planned economies", i.e. the developmental regimes of East Asia, were greatly attracted by the principles of Taylorism, since central economic planning is based on precise predictions and optimization by design of the costs that economic production generates.

3.3 FORCED INDUSTRIALIZATION SUPPORTED BY THE ARMY

Under General Park Chung-hee's military regime, authoritarian rule and Taylorist economic principles became tightly intertwined with a forced industrialization process. Park had witnessed first hand the results of this type of top-down development while serving in the Imperial Japanese Army in Manchuria.

The occupation of Manchuria had been a key part of Japan's colonial strategy in Asia. As early as 1905, after the end of the Russo-Japanese War, Japan took control of the southernmost branch of the Chinese Eastern Railway. The Japanese created a semi-private company to run the line and develop agricultural settlements and industrial complexes along it. This company, known officialy as South Manchuria Railway Company (南満洲鐵道株式會社: *Minamimanshū Tetsudō Kabushikigaisha*), or 'Mantetsu' for short, was controlled by the Army. The line quickly became an infrastructure engineered to support economic development. In 1916, it began to break up into a series of subsidiary companies that operated in mining, port facilities, freight transport, agricultural development, steel production, ceramics and power plants. The Mantetsu quickly became the largest and most profitable corporation in the Japanese Empire, providing up to a quarter of national fiscal revenue in the 1920s. When the Japanese created the Manchukuo puppet state in 1932, the company took on a quasi-governmental role. The corporation's extremely good performance and strength were due to their connections with absolutist power and the army (Young, 1999, pp. 25, 31-32, 250). Through the combination of German industrialization rationalization and Soviet five-year economic planning adapted to suit military purposes by the reform-minded Japanese bureaucrats, Japan's colonial venture in Asia became a precedent for developmental state patterns (Murakami, 2012). At the same time, the large colonial enterprise turned into an enormous design opportunity for the development of the first wave of Japanese Metabolist architects[1].

Having grown up under Japanese rule, Park Chung-hee was impressed about Japan's swift modernization process after the Meiji Restoration, and about the Japanese warrior code, the *bushidō* or 'the way of the warrior' (Hwang, 2010, p. 229). After working as a teacher, he received training as an officer in the Japanese Imperial Army and went on to serve in the Manchukuo Imperial Army at the end of World War II, mainly fighting against Korean guerrillas[2].

The Japanese military training, and in particular its code of honor would become the future general's core values. This militaristic worldview is basic in order to understand both his particular approach to modernization enforced by the state and his belief that any predicament could be overcome by sheer willpower. One of Park's most known sayings was *'We can do anything if we try'* (Eckert, 2016, p. 3). This motto was the origin of the 'can-do' attitude that characterized the developmental period, to the point of becoming a feature of Korean modern identity.

Following the end of the Korean War in 1953, the army became the strongest and best-organized institution in the country. This, along with the absolutist regime and the fact that the Korean War (1950-53) never formally ended (no armistice was ever signed), helped to consolidate the army's role in politics and society, to the point that South Korea under Park's regime was one of the most militarized states in the world (Eckert, 2016, pp. 1-2). Although the army has not fought in any other war, over the following thirty years it served to provide training in the industrial discipline that has

1 See 'Japanese Colonial Planning in Manchuria' in '15.4 Street Grids as Frameworks for Urban Development', Chapter 15, Volume 01.
2 See Figure 3-1 on page 73.

Figure 3-1. Park Chung-hee as an officer of the Manchukuo Japanese Imperial Army in Manchuria during World War II.
Photographer unknown, image in the public domain in South Korea.

Figure 3-2. Major-General Park Chung-hee during the May 16th, 1961 coup d'etat.
Photographer unknown, image in the public domain in South Korea.

Figure 3-3. President Chung-hee looking at the mock-up of the planning for the city at an exposition in 1966.
Source: http://www.ko-reabang.com/2012/pictures/photos-document-gangnams-change-in-style.html.

characterized Korea's *chaebol*. The link between military discipline and modern capitalist production had been already developed by Max Weber at the turn of the century, and was expressed by General Park in another one of his famous sayings: *'Rich country, strong army'*[3].

During the developmental period, this military worldview and discipline were also pressed into service not to defeat an enemy, but to subjugate the physical environment. Military tactics and strategies were deployed through infrastructural works to conquer nature. A paradigmatic case was the mobilization of officers from the engineer corps in order to make up for the lack of technical experts during the construction of the Gyeongbu Expressway (경부고속도로, 1968-70). According to Kim Jeong-Ryeom (Presidential Chief of Staff at the time), *"President Park made a tour of the construction fields and commanded working progress as if there were battle fields. President Park declared a war, set up strategies, and commanded directly the combat soldiers. […] In concrete terms, he set up a combat dispatch within the Blue House, and made three military engineering officers and one technical officer taken from the ministry of construction reside there to analyze and monitor the construction plan"* (Son, 2003, p. 112. Quoted in Choi, 2012, p. 195). In the two years and a half that took to complete the 416 km from Seoul to Busan, seventy-seven workers were killed and many others were injured.

A similar attitude was exhibited by Seoul's mayor Kim Hyun-ok, a former comrade in arms of General Park, who during the implementation of the Yeouido Plan (1968-69), personally oversaw the entire construction of the embankments of the island working from a tent on the field and sleeping on a military bunk bed, so the project could be finalized within an improbable hundred days (Choi, 2012)[4].

3.4 FOREIGN AID AFTER THE KOREAN WAR

The war left South Korea in a state of devastation. The population had been decimated and the country had few natural resources and no capital, domestic market, tradition for foreign trade, industrial development or entrepreneurs.

So how was the economic miracle between the 1960s and 1990s achieved? The unprecedented economic growth was kick-started by three sets of capital inflows: American economic aid, Japanese war reparations, and payment for Korea's participation in the Vietnam War.

The United States poured huge sums of money into the country after World War II as part of its Cold War policies to allow the economic recovery of US allies situated in strategic geopolitical locations (in a similar manner to the European Recovery Program, or Marshall Plan). According to official sources, South Korea received US$12 billion between 1945 and 1965 (Ogle, 1990, p. 35. Quoted in Cumings, 2005, p. 306). The amount of capital was particularly high in 1957, reaching more than a billion US dollars: $383 million in economic aid, $400 million in military aid, and $300 million to cover the cost of American troops on Korean soil. South Korea received far more military aid than Europe during that period, and four times as much as what the whole of South America received (Woo, 1991, pp. 45-6. Quoted in Cumings, 2005, p. 307).

Meanwhile, in 1965, following lengthy US-led negotiations between South Korea and Japan, the latter approved a series of subsidies and loans to the tune of US$500 million, plus an additional $300 million in investment by private companies as compensation for damages during the colonial period (Cumings, 2005, pp. 303 and 320). The terms of the agreement are particularly interesting, since they stated that the money could not officially be referred to as reparations and that no further claims could be made in the future. In other words, Japan has never officially apologized for damages during the colonial era, a fact that remains controversial even today.

3 See Figure 3-2 on page 73.
4 See '3.5 Yeouido Plan' in Chapter 3, Section A, Volume 02.

At the request of the United States, South Korea had the second-largest contingent in the anti-Communist bloc during the Vietnam War, providing 320,000 soldiers over a period of nine years between 1964 and 1973. The United States paid around US$236 million for that support, thus making a substantial contribution to the fivefold increase in South Korea's GDP during the military conflict (최영해, 2008).

This capital formed the basis for the pact between President Park Chung-hee and the private entrepreneurs who gave rise to the *chaebol*. Under the agreement, the entrepreneurs would receive various benefits: loans and mortgages with very favorable terms; cheap land, infrastructure and services; the contact details of foreign businesses with know-how that they could copy; access to foreign markets and distribution channels; skilled manpower at below-market prices; and the repression of any trade unions or workers' movements. In exchange, the state would set annual production targets, decide the field of specialization and the number of competitors, and ensure the market was large enough for all of them to grow. The state would also take a percentage of the profits, and would penalize or reward entrepreneurs based on their performance. It is also important to note that family connections began to flourish between the state and the corporations (Cumings, 2005, p. 316).

The developmental state imposed by Park Chung-hee following the 1961 *coup d'état* was based on the assimilation of modernization and economic development as a state ideology and as a way of legitimizing the authoritarian regime. The dictatorship used the specter of economic poverty and political dependence on foreign powers after 35 years of Japanese colonization and civil war to justify any kind of measure that would boost economic growth.

As Kim Won Bae explains, South Korea's modern history is tied to events imposed from abroad (Kim, 1999, p. 5). As a result of a chain of events that included the forced opening of the country to the outside through the Ganghwa Treaty (강화도조약) imposed by Japan in 1876, colonization in 1910, the US and Russian-led North-South partition in 1948, and the Korean War instigated by Cold War powers, a medieval society steeped in tradition was brought to an abrupt halt by the imposition of forced modernization through the imperialist policies of industrialized nations. Consequently, it became normal to import and emulate Western ideologies and practices to drive economic and social development, albeit often in a manner distorted by the ruling elite, who would reinterpret them to suit their own interests.

The developmentalism adopted by the regime following the 1961coup was therefore depended both on a post-colonial syndrome and on the influence of US-educated technocrats and advisers in terms of the importation, emulation and adaptation of modern western practices. It also depended on the tradition of political authoritarianism and the privileged powers held by an elite minority. This form of developmentalism, based on a distorted understanding of modernity as economic growth and on a capitalism imbued with traditional components of authoritarianism and nepotism, had the following consequences on the city:

- The city came to be seen as a driver of economic growth and a base for production rather than as a place to live.
- A monopolistic housing market was formed based on the idea of a "captive client base".
- Planning used vertical decision-making, thus ignoring public participation.
- A previously non-existent urban middle class arose that subjected itself to the dictatorship's economic policies in exchange for the regime's support.
- It became possible to accumulate wealth through real estate, so capital began to accumulate in the hands of an elite.

CHAPTER 4
DEMOGRAPHIC CONTEXT

4.1 INTRODUCTION TO THE DEMOGRAPHY OF SEOUL

The changes and developments in Seoul's residential landscapes throughout the twentieth century, especially during the second half, were part of a permanent struggle to tackle the chronic housing shortage that had existed since the period of Japanese colonization (1910-1945). In the 1960s, rapid urbanization driven by the industrialization and economic development that began under President Park Chung-hee's military dictatorship (1961-1972) made the housing shortage even worse.

In the 35 years between 1955 and 1990, Seoul's population grew from 1.58 million to 10.4 million. In other words, it increased by more than 250,000 people a year during that period, making the growth unprecedented[1]. This section discusses why the capital city witnessed such huge population growth.

Seoul's population had hovered at around 200,000 throughout the six-century reign of the Joseon Dynasty (1392-1910). The city walls (enclosing an area covering around 15.5 km^2), the surrounding mountains and the Han River acted as natural boundaries.

It was not until the Japanese colonial period that the city underwent its first structural changes. As part of the machinery of military occupation, the city was modified to improve military efficiency and to pave the way for industrialization. As the feudal city was transformed into a modern city, walls were knocked down, avenues were built in a grid layout cutting across the medieval urban fabric, and the city grew along the streetcar tracks and radial roads. Seoul ventured across the river for the first time along the railway line leading to the port of Incheon, the main entry point for the Japanese. Around 1942, toward the end of Japanese occupation, two main factors drove the city's population past the million mark: the concentration of workers in the capital, drawn by its industrialization, and the concentration of administrative functions. Another factor was that colonial agricultural policies plunged landless peasants into poverty, many of whom fled to the capital in search of better opportunities.

Between the country's liberation from the Japanese and the start of the Korean War in 1950, the population continued to rise thanks to migrants from rural areas and the return of Koreans who had gone into exile or had been forced to move abroad during the occupation. In 1949 there were an estimated 1.4 million people living in Seoul, which now covered 248 km^2. The Korean War hit Seoul hard, the war front having moved across the city several times. Around a third of homes are thought to have been destroyed, but after the war the city continued to attract new people, some fleeing the destruction of rural settlements, some taking exile from the North Korean regime (Kim, 2003, p. 5). The capital was seen as the only place with opportunities, and by 1960 the population had reached 2.4 million. Faced with a housing shortage, many more people began to build their own homes, especially alongside rivers and on the hard-to-access hills and mountains surrounding the city.

1 See Figure 4-1 on page 77.

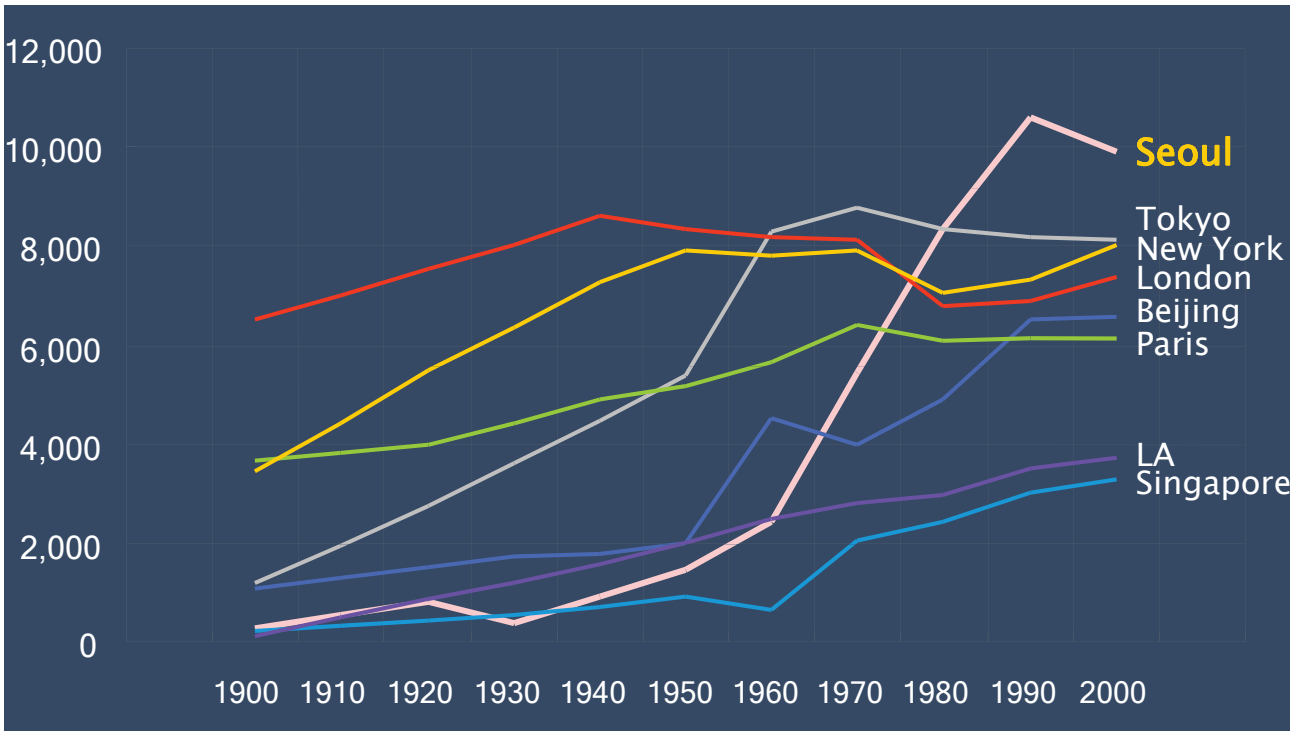


Figure 4-1. Evolution of Seoul's population compared to that of other major capitals, 1900-2000.
Unit: 1,000 people (Kim, 2003, p. 2).

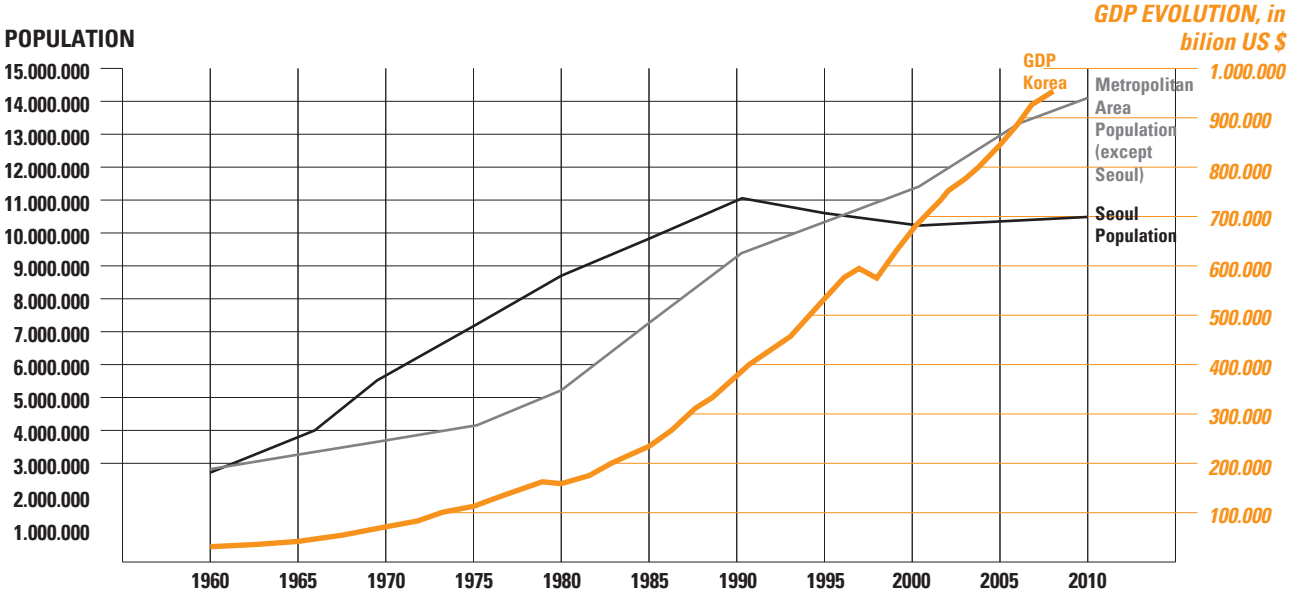


Figure 4-2. Population growth in Seoul and the metropolitan area and GDP growth, 1960-2010.
The city's population is shown in black, that of the metropolitan area in gray, and gross domestic product in orange.

The 1960s saw the founding of the Third Republic by a military dictatorship that set economic development and national modernization as its main goals. The regime drew up a series of five-year economic plans based around the export of manufactured goods. Seoul became the main beneficiary of economic investment, thus widening the gap in opportunities between the city and rural areas and fueling further migration to the capital. In 1963, the city limits were pushed further back, doubling Seoul's size to 593 km^2 square miles. Ten years later, the city grew again to 606 km^2, close to its current size.

These strategies initiated through the military government's policies to monopolize economic opportunities would consolidate and perpetuate the divide between the capital and the rest of the country, not only in terms of economic opportunities, but also in other areas such as education, jobs and access to culture. As a result, Seoul's population has continued to grow well into the twenty-first century.

One noteworthy feature was the apparent negative population growth that began in the late 1990s[2]. In 1990, a number of satellite cities were built outside Seoul's city limits under a new population decentralization policy. The measure was the final step in the city's transformation from an independent urban entity to the center of a metropolitan area (the Seoul National Capital Area) with a population of more than 24 million, almost half South Korea's population (48.7 million in 2011), as seen in Figure 4-2 on page 77.

4.2 A CHRONIC HOUSING SHORTAGE IN THE TWENTIETH CENTURY

To understand the reasons behind the enormous demand for housing in Seoul during this period, it is useful to compare how the city's population size and the number of houses have evolved over time.

'Housing shortage' refers to the relationship between the number of existing homes on the market and the level of demand, i.e. the number of families. This is the most widely used definition for evaluating housing market conditions.

As shown in Figure 4-3 on page 79, there was a very small housing shortage (5.8%) in Seoul in the 1920s, during Japan's colonial occupation, when there were 60,000 homes for the 200,000 people living in the city. These figures had remained fairly constant throughout the reign of the Joseon Dynasty, which made the city its capital as early as 1392. In 1944, shortly before Korea was liberated from Japanese colonial rule, the number of homes had increased to 132,000, but the housing shortage had risen to 40%, with construction unable to keep pace with population growth. The main reason why supply grew more slowly than demand was because the Japanese authorities did not take active measures to deal with the housing shortage, since they saw it as a Korean problem that did not directly impact the Japanese (Sohn, 2003, p. 225).

During the period between the country's liberation from colonial rule and the outbreak of the Korean War, Seoul had quite terrible housing conditions. New buildings were not being erected due to the dire economic situation, and political instability prevented government from properly tackling the problem. Nevertheless, there was no respite to the influx of migrants, and the only solution was for them to build their own homes. Informal settlements sprang up in various parts of the city and became a normal and significant part of Seoul's landscape during that period.

The situation was rather similar in 1961 after the period of political, social and economic instability that followed liberation from Japanese colonial

2 See Figure 4-2 on page 77.

HOUSING SHORTAGE IN SEOUL, 1926 - 2009

Year	# of homes	# of families	Housing Shortage
1926	64,889	68,862	***5.8***
1931	69,453	77,701	***10.6***
1932	57,965	78,261	***25.9***
1933	70,599	79,519	***11.2***
1934	68,186	80,961	***15.8***
1935	101,767	131,239	***22.5***
1936	107,946	138,583	***22.1***
1944	132,000	220,938	***40.3***
1961	275,436	485,129	***43.2***
1962	306,289	554,136	***44.7***
1963	322,386	597,132	***46.0***
1964	331,133	633,026	***47.7***
1965	345,657	649,290	***46.8***
1966	361,943	724,043	***50.0***
1967	406,119	754,261	***46.2***
1968	506,810	837,362	***39.5***
1969	543,645	961,491	***43.5***
1970	584,000	1,029,000	***43.2***
1975	744,000	1,321,000	***43.7***
1980	968,000	1,724,000	***43.9***
1985	1,176,000	2,126,000	***44.7***
1990	1,458,000	2,518,000	***42.1***
1995	1,728,000	2,541,000	***32.0***
1996	1,787,000	2,563,000	***30.3***
1997	1,864,000	2,610,000	***28.6***
1998	1,880,000	2,659,000	***29.3***
1999	1,923,000	2,710,000	***29.0***
2000	1,979,000	2,762,000	***28.3***
2001	2,032,000	2,550,000	***20.3***
2002	2,103,000	2,551,000	***17.6***
2003	2,203,000	2,553,000	***13.7***
2004	2,278,000	2,554,000	***10.8***
2005	2,322,000	2,588,000	***10.3***
2006	2,370,000	2,597,000	***8.7***
2007	2,391,000	2,605,000	***8.2***
2008	2,451,000	2,613,000	***6.2***
2009	2,479,000	2,621,000	***5.4***

Figure 4-3. Housing shortage in Seoul, 1926 - 2009.
Based on data from the Seoul Development Institute: "Changing Profile of Seoul – Major Statistics and Trends", Chapter 3, *Housing and Construction,* Page 3 (2005) http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp for 1926-2000, and Land and Housing Corporation data for 2000-2009.

rule and the Korean War (1951-1953). The dictatorship brought political stability and introduced economic measures that encouraged the investment of resources in the capital city, which saw massive population growth due to a rural exodus. This only worsened the chronic housing shortage, which peaked at 50% in 1966. Entire neighborhoods of informal homes continued to be built along the river banks and on the hills and mountains surrounding the city. They came to be known as 'moon villages', because they were higher up and difficult to access.

The situation led to government measures to stem the crisis and foreign capital investment in the form of aid. The five-year economic plans during the Third Republic incorporated housing policies, which began to reverse the trend in 1988. The 'Two Million Homes Plan' launched in 1990 further reduced the housing shortage. The economic plans also included policies to stabilize demand.

Seoul's housing shortage has fallen drastically in recent years, and the rest of country had a surplus of houses by 2002, according to estimates[3]. It is important to explain the limitation on evaluating the housing market based on a *housing shortage*, a concept that largely depends on how the housing market is calculated and what the level of demand is. Generally speaking, the concept does not take into consideration atypical situations such as single-parent homes, homes with more than one family, and the use of non-residential buildings as homes. That is why, despite the statistics, it is believed that housing provision in 1998 was actually around 90%.

This long-term chronic housing shortage was one of the drivers of the city's urban development during the final third of the twentieth century.

4.3 HOUSING IN SEOUL (1967-2009)

The number of houses built per year in Seoul began to increase gradually and consistently in the 1960s[4]. Around 29,000 new homes were built per year in the late 1960s. This figure rose to around 40,000 in the 1970s and around 57,000 in the 1980s. In 1986, no fewer than 120,000 new homes were built, but the 100,000 mark was not reached regularly until the 1990s. This impressive growth in the housing market was fueled by Korean migrants seeking better job opportunities, increased demand for housing from people who received pay rises linked to economic growth, and the aggressive policies that the government began to implement in the mid-1980s to support the building of new homes.

The major economic crisis that affected East Asia in the late 1990s reduced annual demand for new homes below the 30,000 mark. The market quickly recovered, however, and the feat of 100,000 new homes in a year was achieved once again in 2002, when no fewer than 160,000 were built. Since 2004, the market has gradually stagnated as demand for homes has been met.

The global financial crisis is an important factor to be considered, since it began to affect the construction sector around the world in 2008. As indicated in Figure 4-5 on page 83, in South Korea the crisis merely intensified the existing downward trend in the housing sector.

Data on homes built in Seoul reflect how three basic parameters evolved over time: living conditions in the home, the real estate market, and interventionist regulatory policies implemented by government. For instance, urbanization of the south bank of the river peaked in the 1970s when the Gangnam area was built. This development on former agricultural land sparked a period of speculation that increased the number of homes built to 79,000 in 1978, up 90% on the previous year. To maintain market prices, the government passed measures to control speculation. The number of homes built fell the following year and did not recover to their 1978 level until well into

3 See Figure 4-4 on page 81.

4 See Figure 4-5 on page 83.

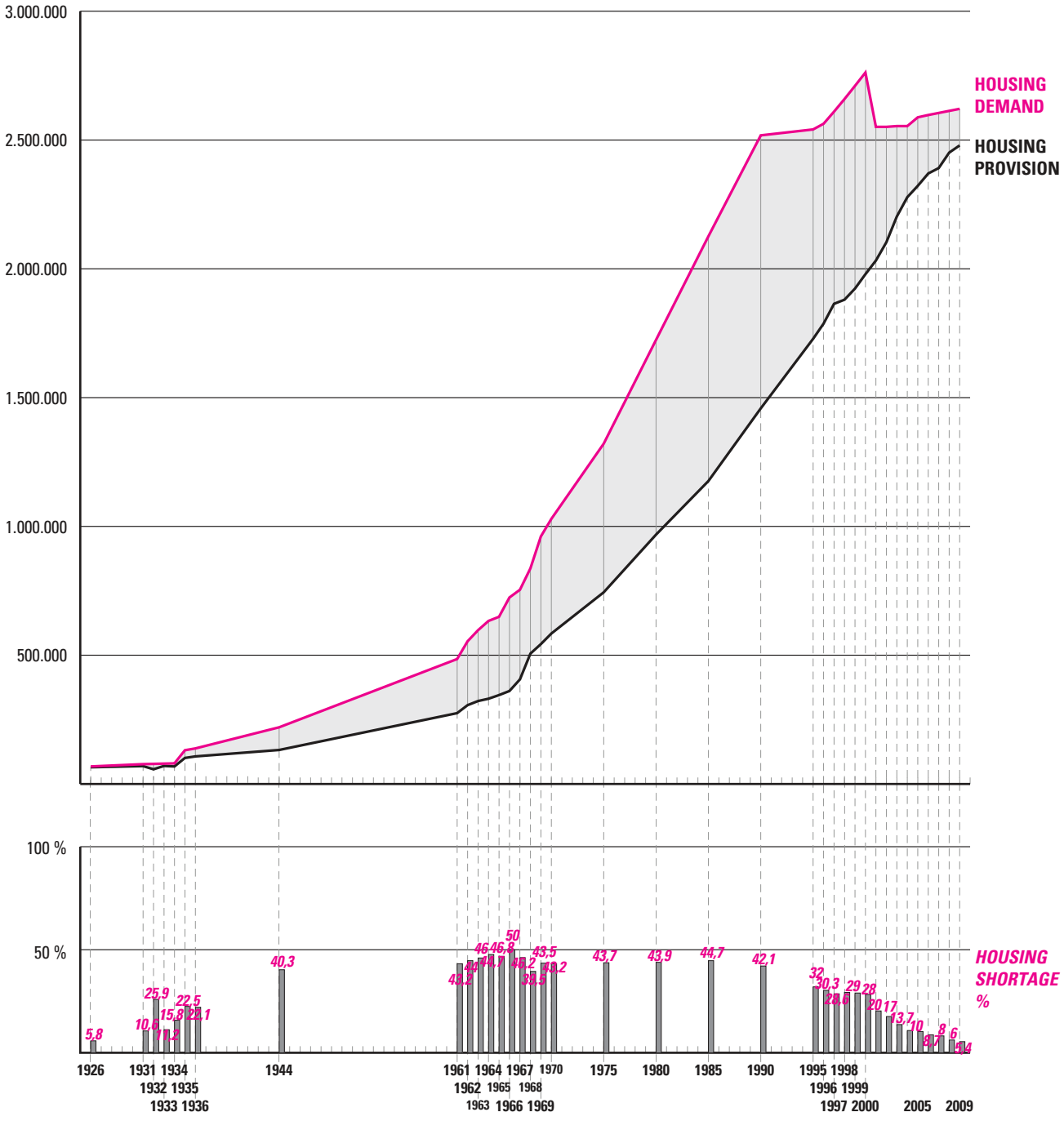


Figure 4-4. Housing shortage in Seoul, 1926-2009.
Based on: Seoul Development Institute, (2005). "Changing Profile of Seoul – Major Statistics and Trends".
In: *Housing and Construction,* p 3.
Available at http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp for 1926-2000, based on Land and Housing Corporation data for 2000-2009.

the 1980s[5].

With the exception of 1986, amid euphoria surrounding the 1986 Asian Games and 1988 Olympic Games, the number of homes built did not rise again until 1990, two years after the government initiated the Two Million Homes Plan, which drove the building of 100,000 homes a year between 1990 and 1996. Following the 1997 financial crisis, the figures then slumped to fewer than 30,000 in 1998, but they quickly recovered, surpassing 100,000 again in 2001 thanks to demand that accumulated during the crisis and the need to rebuild the vast number of homes (especially apartment complexes, as we shall see later) built during the 1970s and 1980s (Seoul Development Institute, 2005, pp. 61-62).

4.4 EVOLUTION OF HOUSING DEMAND (1967-2010)

The constant increase in the number of homes built per year starting in the 1960s was accompanied by a drastic shift in the main type of building.

Until the mid-1970s, more than half of the homes built in Seoul were single-family homes[6]. At one time, they accounted for 80% of the housing stock, with apartment complexes accounting for only 4%. The proportion of single-family homes began to fall in 1977, and by the mid-1980s they accounted for fewer than half of the homes in Seoul[7]. By the late 1990s, single-family homes accounted for fewer than 10% of homes being built, and by 2001 this figure had fallen to 3.1%.

From the mid-1980s, mass housing began to be predominant, with apartment complexes quickly becoming the norm as the south bank of the Han River (Gangnam) was developed. These apartment complexes accounted for the majority of homes built in the 1980s[8]. In 1996, the stock of apartments overtook the stock of single-family homes for the first time. This trend continued, and by 2001, apartment complexes accounted for 40% of Korean homes, while single-family homes accounted for only 23.5%. The housing stock had completely changed because by 1990 more than 70% of new homes being built were apartments; this figure peaked in 1999 at 88%. Moreover, row houses and multifamily buildings have remained at 15% of the stock since the 1990s. There was a notable increase in the number of multifamily blocks up to four stories high, which were permitted by the 1990 Building Act.

The make-up of housing in Seoul therefore changed completely in just 30 years. In 1970, three-quarters of homes were single-family homes, but by 2000, there were many multifamily residentials, apartment complexes and row houses. More than three-quarters of the current multifamily homes that replaced single-family homes are the now-dominant apartment complexes. Furthermore, as shown in Figure 4-6 on page 85, apartment

5 See Figure 4-5 on page 83.

6 See Figure 4-6 on page 85 and Figure 4-7 on page 86.

7 See Figure 4-8 on page 87.

8 See Figure 4-8 on page 87.

TOTAL HOMES BUILT IN SEOUL, 1967 - 2009

Year	Homes Built
1962 - 66	N.D.
1967 - 1971	*157,057*
1967	29,804
1968	27,739
1969	30,682
1970	36,280
1971	32,552
1972 - 1976	*208,838*
1972	19,203
1973	35,681
1974	45,182
1975	52,925
1976	55,847
1977 - 1981	*287,739*
1977	61,909
1978	79,574
1979	52,354
1980	53,375
1981	40,526
1982 - 1986	*336,859*
1982	63,220
1983	51,455
1984	46,060
1985	52,529
1986	123,595
1987 - 1991	*416,862*
1987	62,278
1988	54,443
1989	76,273
1990	120,371
1991	103,497
1992 - 1996	*512,735*
1992	106,441
1993	111,656
1994	86,220
1995	103,617
1996	104,801
1997 - 2001	*374,426*
1997	70,446
1998	28,994
1999	61,460
2000	96,936
2001	116,590
2002 - 2006	*425,135*
2002	159,767
2003	115,755
2004	58,122
2005	51,797
2006	39,694
2007 - 2009	*147,349*
2007	62,842
2008	48,417
2009	36,090

Figure 4-5. Total homes built in Seoul, 1967-2009.
Based on data from the Seoul Development Institute, (2005). "Changing Profile of Seoul – Major Statistics and Trends". In: *Housing and Construction*, Page 3. Available at: http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp, and Land and Housing Corporation, (2010). *2010 Year Book of Land & Housing Statistics.*

complexes built between 1975 and 2010 contained 1,540,002 homes, or 58% of new homes during that period. Seoul Housing Department records listed as many as 2,098 housing complexes in the city in 2013[9].

4.5 EVOLUTION OF HOMEOWNERSHIP (1960-2000)

The level of homeownership (an indicator of wealth) in Seoul remained fairly constant at around 50% from the time of Japanese colonization to 1960. After 1960, measures taken by the new government led to a steady increase from 56.5% to 80% by the mid-1980s. In the 1990s, however, homeownership began to wane, falling to 65.7% by 2000[10].

Meanwhile, the proportion of people living in different types of rental housing increased from 10.1% in 1970 to 24.2% in 1990 and 33% in 2000. In other words, in 2000, around a third of the people of Seoul were tenants (Seoul Development Institute, 2005, p. 8).

This sudden change in the homeownership trend was linked to price rises during that period. Between 1986 and 1991, rapid economic growth (and the resulting urban development), and the 1988 Olympic Games pushed house prices up by 67% nationwide. In Seoul, apartment prices increased by 260% between 1988 and 1991. Another factor that caused prices to rise was the liberalization of the market and the elimination of price controls on new apartments to provide an incentive to construction firms.

In this sense, the high homeownership rates and construction policies for apartment complexes are clear indicators of the aims of housing policy in Seoul. While France's *grands ensembles* – homes built with legal and financial support from central government to benefit the most disadvantaged sectors of the population – were part of a social housing policy, Seoul's *apat'u tanji* policies were designed to facilitate access to homeownership, and therefore to generate wealth (Gelezéau, 2004, pp. 208-209).

This policy was based mainly on controlling the prices of new homes. The 1972 Housing Construction Promotion Law set below-market prices for new apartments in complexes with more than 20 homes, i.e. for all homes in the *apat'u tanji*. This measure was very well suited to the nature of Korea's rental market, with its unique *jeonse* or Key Money Deposit leases. Under the terms of a *jeonse*, the tenant makes an initial payment equal to between 35% and 50% of the value of the home, which is returned to the tenant at the end of the lease. Consequently, although price controls reduced the economic incentive of rents, the *jeonse* system allowed the middle and upper classes, who could enter the lottery for new homes, to buy apartments, since they could recover the capital they needed for the initial payment at the end of the *jeonse* term.

9 See 'Appendix 2. Inventory of Apat'u Tanji in Seoul', in Appendices, Volume 02.

10 See Figure 4-9 on page 87.

HOUSING CONSTRUCTION IN SEOUL BY TYPE, 1967 - 2009									
Year	TOTAL NEW HOUSING	Detached houses	%	Apartments	%	Row Houses	%	Multi-family up to 4 floors	%
1962 - 1966	**ND**	**ND**		**ND**		**ND**		**ND**	
1967 - 1971	**157,057**	**ND**		**ND**		**ND**		**ND**	
1967	29,804	ND		ND		ND		ND	
1968	27,739	ND		ND		ND		ND	
1969	30,682	ND		ND		ND		ND	
1970	36,280	ND		ND		ND		ND	
1971	32,552	ND		ND		ND		ND	
1972 - 1976	**208,838**	**ND**		**ND**		**ND**		**ND**	
1972	19,203	ND		ND		ND		ND	
1973	35,681	ND		ND		ND		ND	
1974	45,182	ND		ND		ND		ND	
1975	52,925	28,771	54.4	22,794	43.1	1,279	2.4	ND	
1976	55,847	27,271	48.4	23,926	42.8	4,650	8.3	ND	
1977 - 1981	**287,738**	**72,746**	**25.3%**	**102,932**	**35.8%**	**45,192**	**15.7%**	**ND**	
1977	61,909	ND	ND	ND	ND	ND	ND	ND	
1978	79,574	28,022	35.2	37,361	47.0	9,232	11.6	ND	
1979	52,354	13,992	26.7	11,292	21.6	27,070	51.7	ND	
1980	53,375	24,869	46.6	22,791	42.7	5,715	10.7	ND	
1981	40,526	5,863	14.5	31,488	77.7	3,175	7.8	ND	
1982 - 1986	**336,859**	**56,952**	**16.9%**	**201,264**	**59.7%**	**78,643**	**23.3%**	**ND**	
1982	63,220	11,385	18.0	36,048	57.0	15,787	25.0	ND	
1983	51,455	21,250	41.3	24,077	46.8	6,128	11.9	ND	
1984	46,060	7,193	15.6	30,297	65.8	8,570	18.6	ND	
1985	52,529	8,986	17.1	33,694	64.1	9,849	18.7	ND	
1986	123,595	8,138	6.6	77,148	62.4	38,309	31.0	ND	
1987 - 1991	**416,862**	**102,379**	**24.6%**	**199,969**	**48.0%**	**114,514**	**27.5%**	**ND**	
1987	62,278	11,487	18.4	39,988	64.2	10,803	17.3	ND	
1988	54,443	16,065	29.5	21,987	40.4	16,391	30.1	ND	
1989	76,273	18,045	23.7	45,093	59.1	13,135	17.2	ND	
1990	120,371	34,040	28.3	53,855	44.7	32,476	27.0	ND	
1991	103,497	22,742	22.0	39,046	37.7	41,709	40.3	ND	
1992 - 1996	**512,735**	**64,502**	**12.6%**	**337,140**	**65.8%**	**91,783**	**17.9%**	**19,340**	**3.8%**
1992	106,441	24,271	22.8	61,260	57.6	20,910	19.6	ND	
1993	111,656	1,508	1.4	60,699	54.3	49,479	44.3	ND	
1994	86,220	15,307	17.8	65,750	76.3	5,163	6.0	ND	
1995	103,617	10,375	10.0	76,988	74.3	7,499	7.2	8,755	8.4
1996	104,801	13,041	12.4	72,443	69.1	8,732	8.3	10,585	10.1
1997 - 2001	**374,426**	**12,904**	**3.4%**	**242,567**	**64.8%**	**15,749**	**4.2%**	**103,416**	**27.6%**
1997	70,446	4,800	6.8	52,233	73.8	6,997	9.9	6,626	9.4
1998	28,994	946	3.3	24,619	84.9	1,602	5.5	1,827	6.3
1999	61,460	1,082	1.8	54,146	88.1	1,416	2.3	4,816	7.8
2000	96,936	2,478	2.6	72,149	74.4	2,763	2.9	19,546	20.2
2001	116,590	3,598	3.1	39,420	33.8	2,971	2.5	70,601	60.6
2002 - 2006	**425,135**	**9,463**	**2.2%**	**259,448**	**61.0%**	**4,828**	**1.1%**	**151,393**	**35.6%**
2002	159,767	4,704	2.9	51,815	32.4	2,827	1.8	100,418	62.9
2003	115,755	2,068	1.8	83,611	72.2	924	0.8	29,152	25.2
2004	58,122	983	1.7	49,587	85.3	294	0.5	7,258	12.5
2005	51,797	812	1.6	44,084	85.1	270	0.5	6,631	12.8
2006	39,694	896	2.3	30,351	76.5	513	1.3	7,934	20.0
2007 - 2010	**216,539**	**5,177**	**2.4%**	**149,962**	**69.3%**	**1,786**	**0.8%**	**59,614**	**27.5%**
2007	62,842	774	1.2	50,028	79.6	455	0.7	11,585	18.4
2008	48,417	1,044	2.2	21,938	45.3	705	1.5	24,730	51.1
2009	36,090	1,226	3.4	26,626	73.8	328	0.9	7,910	21.9
2010	69,190	2,133	3.1	51,370	74.2	298	0.4	15,389	22.2
	2,617,157	**TOTAL HOUSING**		**1,540,002**	**Apartment units**				
	100%			**58.8%**					

Figure 4-6. Homes built in Seoul by building type, 1975-2010.
ND = no data.
Based on: Seoul Development Institute, (2005). "Changing Profile of Seoul – Major Statistics and Trends". In: *Housing and Construction*, Page 3. Available at: http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp, and Ministry of Land, Transport and Maritime Affairs for 2001-2010.

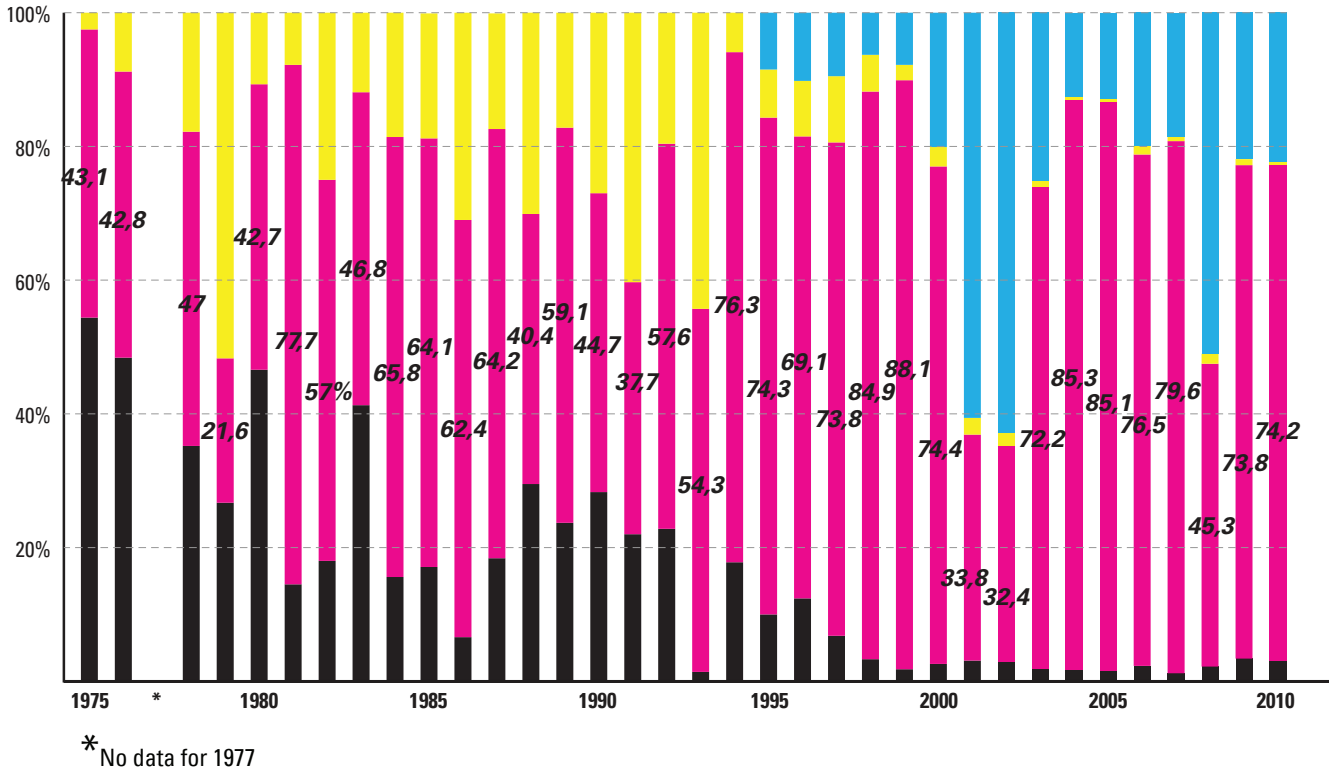


Figure 4-7. Housing built in Seoul by building type, 1975-2010. Based on: Seoul Development Institute, (2005). "Changing Profile of Seoul – Major Statistics and Trends". In: *Housing and Construction*, Page 3. Available at: http://www.sdi.re.kr/eng/seol/inf3/2003_idx.jsp, and Ministry of Land, Transport and Maritime Affairs for 2001-2010.

HOUSING STOCK IN SEOUL BY TYPE, 1970 - 2001

Year	Single Family Housing	%	Apartments	%	Row Housing	Owner-occupied Multi-family Housing		%	Rental-Multi-family Housing	%
1970	515,916	*84.8*	23,987	*3.9*	34,418		ND	*5.7*	ND	*ND*
1975	618,045	*81.8*	58,459	*7.7*	39,583		ND	*5.2*	ND	*ND*
1980	684,083	*68.0*	183,846	*18.3*	68,885		ND	*6.8*	ND	*ND*
1985	688,740	*54.3*	306,398	*24.1*	137,011		ND	*10.8*	ND	*ND*
1990	659,552	*40.7*	502,201	*31.0*	181,156		48,762	*14.2*	ND	*ND*
1991	800,858	*43.2*	545,775	*29.5*		252,656		*13.6*	ND	*ND*
1992	825,506	*41.9*	592,121	*30.1*		275,280		*14.0*	ND	*ND*
1993	828,018	*39.2*	679,551	*32.2*		301,896		*14.3*	ND	*ND*
1994	819,409	*37.8*	705,972	*32.5*		322,443		*14.9*	ND	*ND*
1995	781,613	*35.4*	737,632	*33.4*		344,221		*15.6*	ND	*ND*
1996	768,314	*34.2*	772,814	*34.4*	156,783		197,023	*15.7*	ND	*ND*
1997	759,325	*33.1*	809,576	*35.3*	159,263		203,984	*15.8*	ND	*ND*
1998	756,613	*32.4*	842,643	*36.1*	161,883		206,915	*15.8*	ND	*ND*
1999	751,955	*31.5*	896,359	*37.5*	161,528		209,560	*15.5*	ND	*ND*
2000	611,414	*25.0*	961,868	*39.3*	154,315		228,113	*15.6*	112,343	*4.6*
2001	599,483	*23.5*	1,012,904	*39.6*	150,886		264,214	*16.2*	113,188	*4.4*

Figure 4-8. Homes built in Seoul by building type, 1970-2001.
Based on: Seoul Development Institute, (2005). "Changing Profile of Seoul – Major Statistics and Trends". In: *Housing and Construction,* p. 3. Available at: http://www.sdi.re.kr eng/seol/inf3/2003_idx.jsp.
ND = no data. From 1991 to 1995, data for row houses and multi-family residentials are combined.

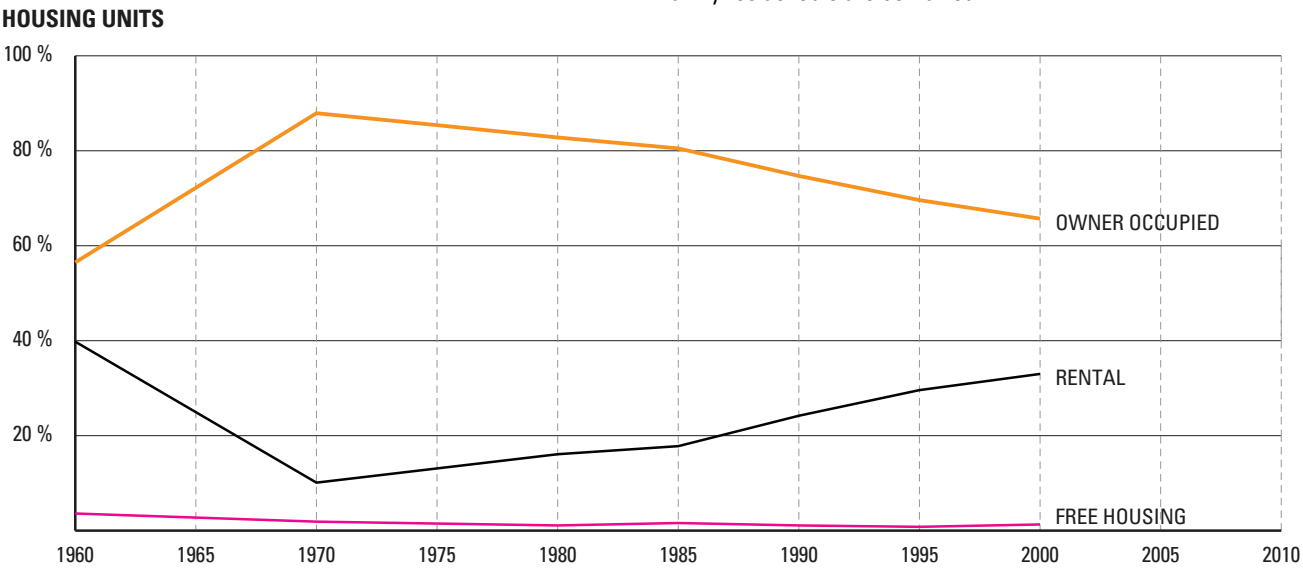


Figure 4-9. Evolution of homeownership, 1960 - 2000.
Source: Seoul Development Institute, 2005, p. 9.

CHAPTER 5
SOCIAL CONTEXT

5.1 MASS HOUSING AS A SOCIAL CONTRACT

Following the end of the Korean War, the housing problem became one of the government's key priorities, so much so that in October 1953, when President Seungman Rhee made a speech calling for national reconstruction, he described the housing problem as far more serious than the food shortage (Sohn, 2003, p. 242). Measures were immediately introduced to build temporary housing funded partly by the government, but mainly by the United Nations Korean Reconstruction Agency (UNKRA). These policies to provide minimum housing financed by foreign capital expanded over the course of the 1950s. The organization chosen to supervise the construction for the government was the *Chosun Housing Corporation*, a public enterprise created by the Japanese colonial government in 1941 and renamed the *Dahean Housing Corporation* following the country's liberation. Although the policies did not even come close to responding to the growing housing shortage, these minimum single-family homes were the first mass-housing developments, setting a precedent for what was to come in the 1960s. They introduced Western innovations, especially in the kitchens and bathrooms and the way interior spaces were separated according to their use. They also began to occupy previously undeveloped land outside the city, thus generating demand for infrastructure that would later attract other developers. The system had many shortcomings, however, most notably the lack of urban planning, and therefore the lack of coordination among the different sectors required for development.

In the 1960s, housing began to appear in the economic policies of the new military government. With the economic situation precarious, there were not enough construction firms able to provide housing, so the *Dahean Housing Corporation* was transformed into the *Korea Housing Corporation* and was given a series of remits in order to tackle the housing problem. One of the main aims of the housing policies at the time was to eliminate informal residential neighborhoods. To achieve this, a series of laws were passed to regulate and facilitate the mass construction of houses, including the 1962 *City Planning Law* and the 1966 *Housing Land Readjustment Law*. Meanwhile, coordinated plans were drawn up to build the infrastructure needed for growth, and neighborhood models imported from abroad were piloted.

It was also during this period that the first apartment complex – the Mapo Apartments – was built in 1962. This first complex marked a turning point in South Korea's housing culture. Through the project, the *Korea Housing Corporation* showed that apartment complexes could provide the answer to the housing shortage and improve the urban environment, since they offered a higher population density than single-family homes, occupying less land and freeing up space for gardens and other public areas. A formula had been found to restructure the urban environment to enable economic growth and mass housing provision. At this point, the government's strategy shifted toward moving people from self-built homes into new, small apartments (between 16 and 26m^2) called 'citizens' apartments', which were erected in places previously occupied by

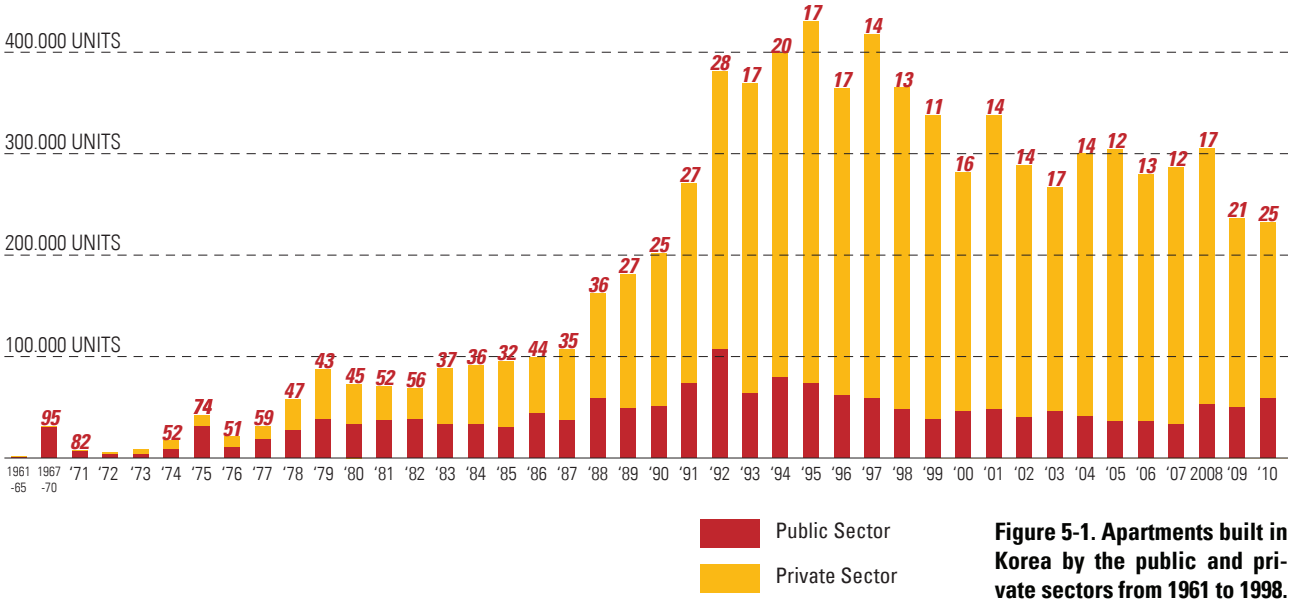


Figure 5-1. Apartments built in Korea by the public and private sectors from 1961 to 1998. Table by author, based on Gelézeau, V., (2008). "Changing Socio-Economic Environments, Housing Culture and New Urban Segregation in Seoul", *European Journal of East Asian Studies*, Volume 7.2, Pages 295-321.

self-built homes and in other underdeveloped areas. In 1968, Seoul mayor Kim Hyeon-ok rolled out a plan to build 2,000 of these apartments. Despite the financial uncertainties, the plan went ahead, but due to major construction deficiencies, the Wau apartments collapsed in April 1970, just four months after being completed, killing 29 people. Because of this event and the difficulties encountered with financing and managing the rented homes, the plans failed to rehouse lower-income citizens in apartments.

Meanwhile, many apartments began to be built for the middle and upper classes. The first two five-year cycles had concluded successfully, with the emergence of a new urban middle class that saw the apartments as an opportunity for an ideal, modern way of life, since they incorporated a number of Western innovations. As part of this vision, government-led social engineering strategies played a very important role. People also began to see the apartments as a lucrative investment. All these factors led the government to approve the 1972 Housing Construction Promotion Law, which regulated planning and construction for large apartment complexes and allowed private construction firms to undertake those kinds of projects. Furthermore, the Korean National Housing Corporation adopted measures to promote the construction of apartments by the private sector, such as incentives to ensure that the apartments were profitable, tax reductions, and measures to facilitate getting a mortgage.

By the late 1970s, the rising popularity of apartments and the increase in the number being built by the private sector led to rampant speculation on land and the apartment sector. The small companies that began building the first private-sector apartments grew into large conglomerates (*chaebol* in Korean[1]).

A paradigm shift had taken place that would irreversibly affect the city's future urban development. The apartments had originally been built in response to the problem of minimum housing for lower-income households, but they were now being taken by the new urban middle class that emerged thanks to the economic measures implemented by the dictatorship. The public sector continued to build apartments, but most homes were now being built by the private sector. The role of government was now more as a manager, facilitator and overseer. The apartments had been introduced to play a similar role to that which they played with more or less success throughout Europe, but they had failed miserably in achieving their initial mission, and now had a brand-new role as objects of speculation and symbols of economic and social progress[2].

Self-build neighborhoods continued to proliferate in the 1960s and 1970s, despite government efforts to stop them. Most were on the hills and mountains around the city, but there were also some in low-lying areas, especially along the Cheonggyecheon, the main stream running through the old city[3]. According to official figures, the number of illegal homes soared from 41,000 in 1961 to 190,000 in 1970, at which point they accounted for 30% of all homes in the city[4] (Lee, 2003, p. 58). By 1983, this figure had been reduced to 13% thanks to aggressive government policies to resettle those living in illegal settlements.

The municipal council's overall strategy was to knock down any building that was occupying public land, especially in the city center, in order to improve the urban appearance, restore the city to working order and allow new areas of growth. In 1967, the regime announced a plan to knock down 137,000 self-build homes over a period of three years. Residents would be given a 26 km^2 plot of public land on the outskirts of the city to build their own home. The residents would have to pay for infrastructure. Similar relocation strategies were used to move residents out of the illegal neighborhoods situated outside the city limits in the surrounding province, in areas that would become satellite cities. They were relocated to the city of Gwangju, 300 km outside Seoul. In just seven years between 1983 and 1990, 720,000 residents of Seoul were forced to leave their

1 See "Glossary" on page 418.

2 See Figure 5-1 on page 89.

3 See Figure 5-2 on page 91.

4 See Figure 5-3 on page 91.

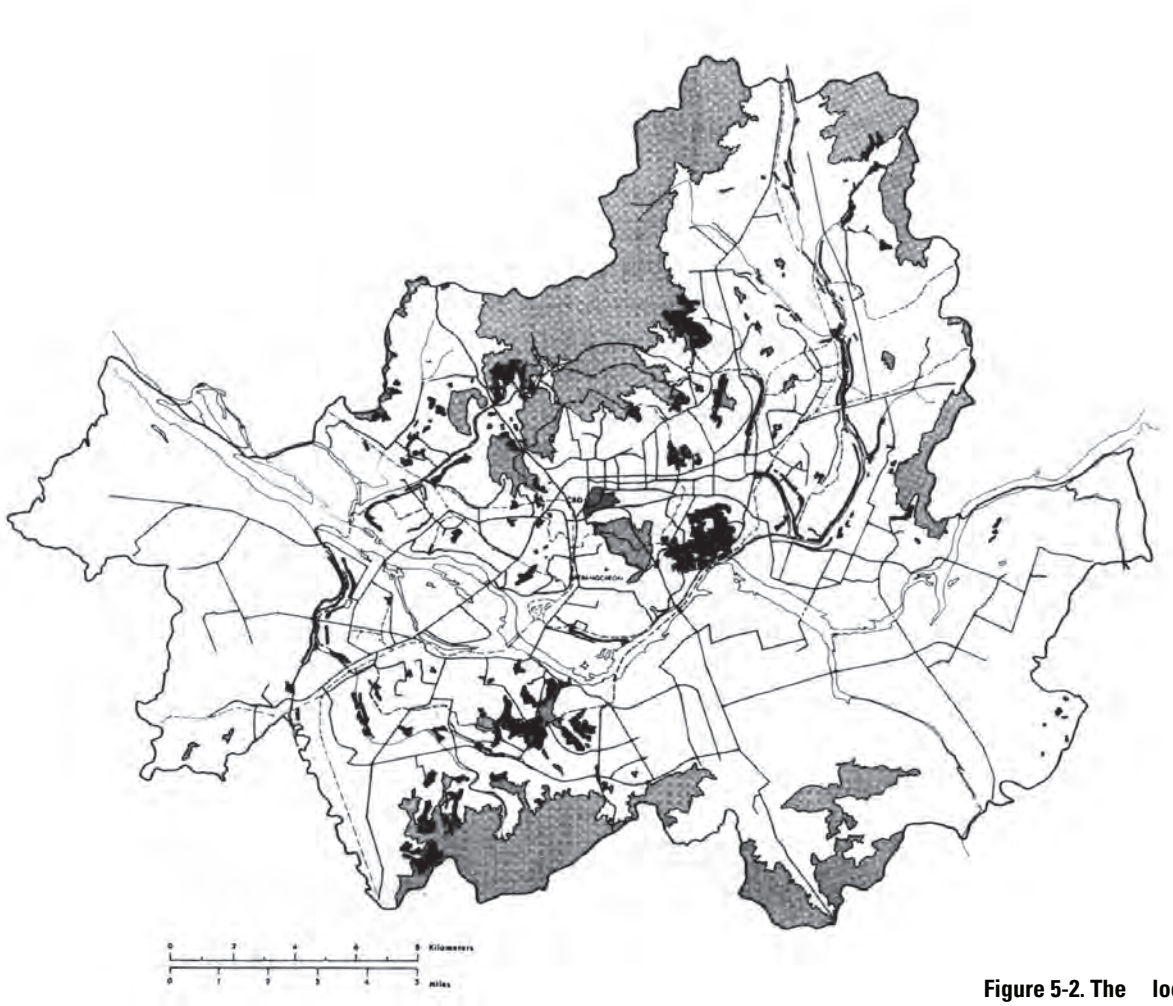


Figure 5-2. The location of self-build neighborhoods in Seoul, 1961-1970.
Slums in bold. In gray, areas with an altitude above 100 m (328 feet). According to Lee, K.-S., (2003) "Seoul's Urban Growth in the 20th Century: From a Pre-Modern City to a Global Metropolis". In: Kim, K.-J. (ed.) *Seoul, 20th Century – Growth and Change in the Last 100 Years.* 1st ed. Seoul, Seoul Development Institute. Page 59.

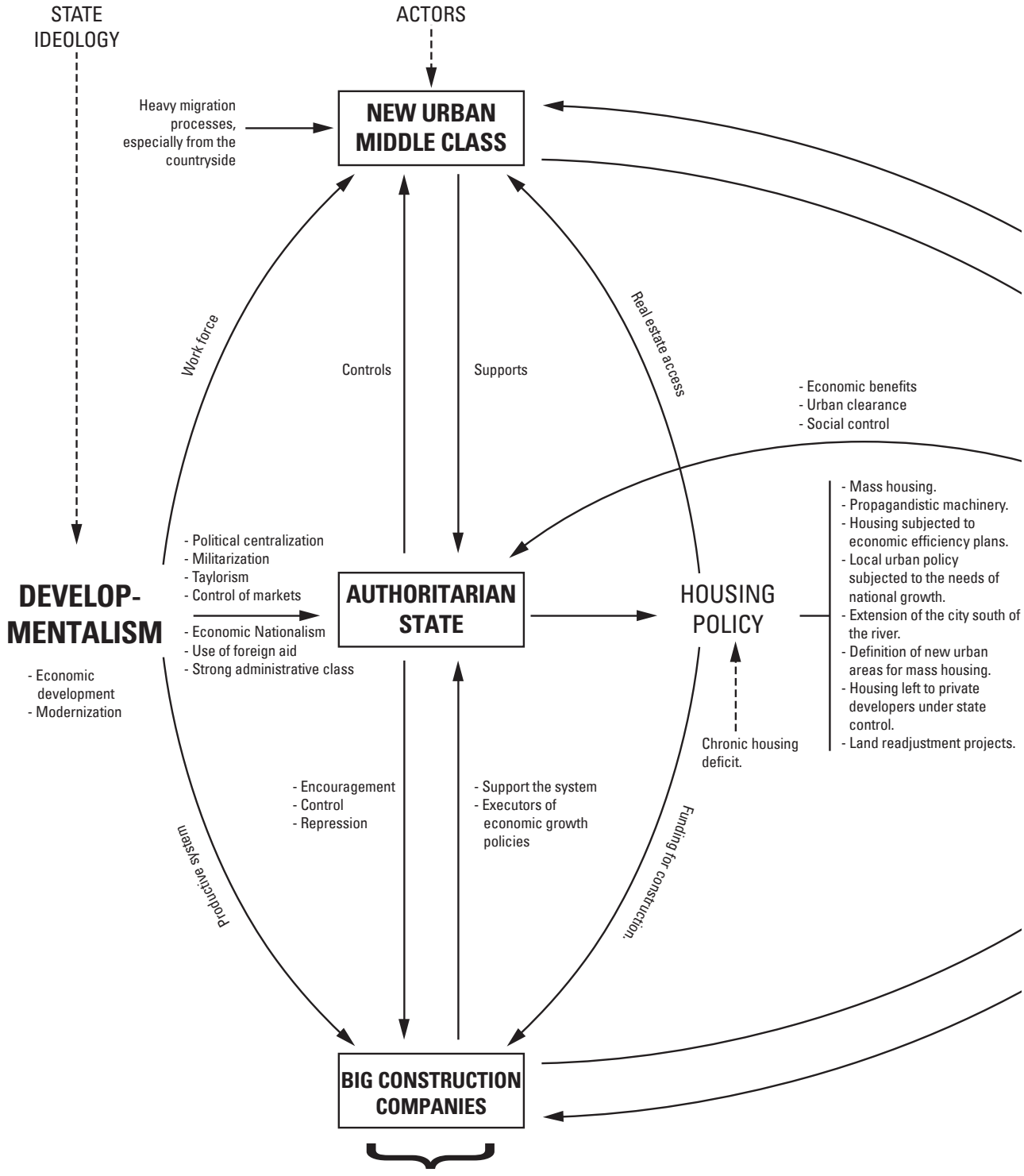
PERCENTAGE OF SELF-BUILT HOMES IN SEOUL, 1961 - 1983

Year	Total Homes	Self-built Homes	%
1961	275,436	41,238	*15%*
1962	306,289	44,721	*15%*
1963	322,386	45,446	*14%*
1964	331,133	43,946	*13%*
1965	345,657	43,321	*13%*
1966	361,945	136,650	*38%*
1967	406,119	150,000	*37%*
1968	516,810	169,000	*33%*
1969	543,645	181,000	*33%*
1970	600,365	187,554	*31%*
1976	813,000	134,900	*17%*
1980	993,661	154,047	*16%*
1983	1,141,800	149,515	*13%*

Figure 5-3. Proportion of self-build homes, 1961-1983.
According to data from Lee, K.-S., (2003) "Seoul's Urban Growth in the 20th Century: From a Pre-Modern City to a Global Metropolis". In: Kim, K.-J. (ed.) *Seoul, 20th Century – Growth and Change in the Last 100 Years.* 1st ed. Seoul, Seoul Development Institute. Page 58.

MAIN ACTORS OF THE DEVELOMPENTAL REGIME

5.1 / MASS HOUSING AS A SOCIAL CONTRACT



ACTORS EXCLUDED FROM THE PROCESS — **POOR CLASSES** —
- Lack of access to housing policies due to lack of initial funding.
- Forced to flee permanent urban reconstruction for economic profit.

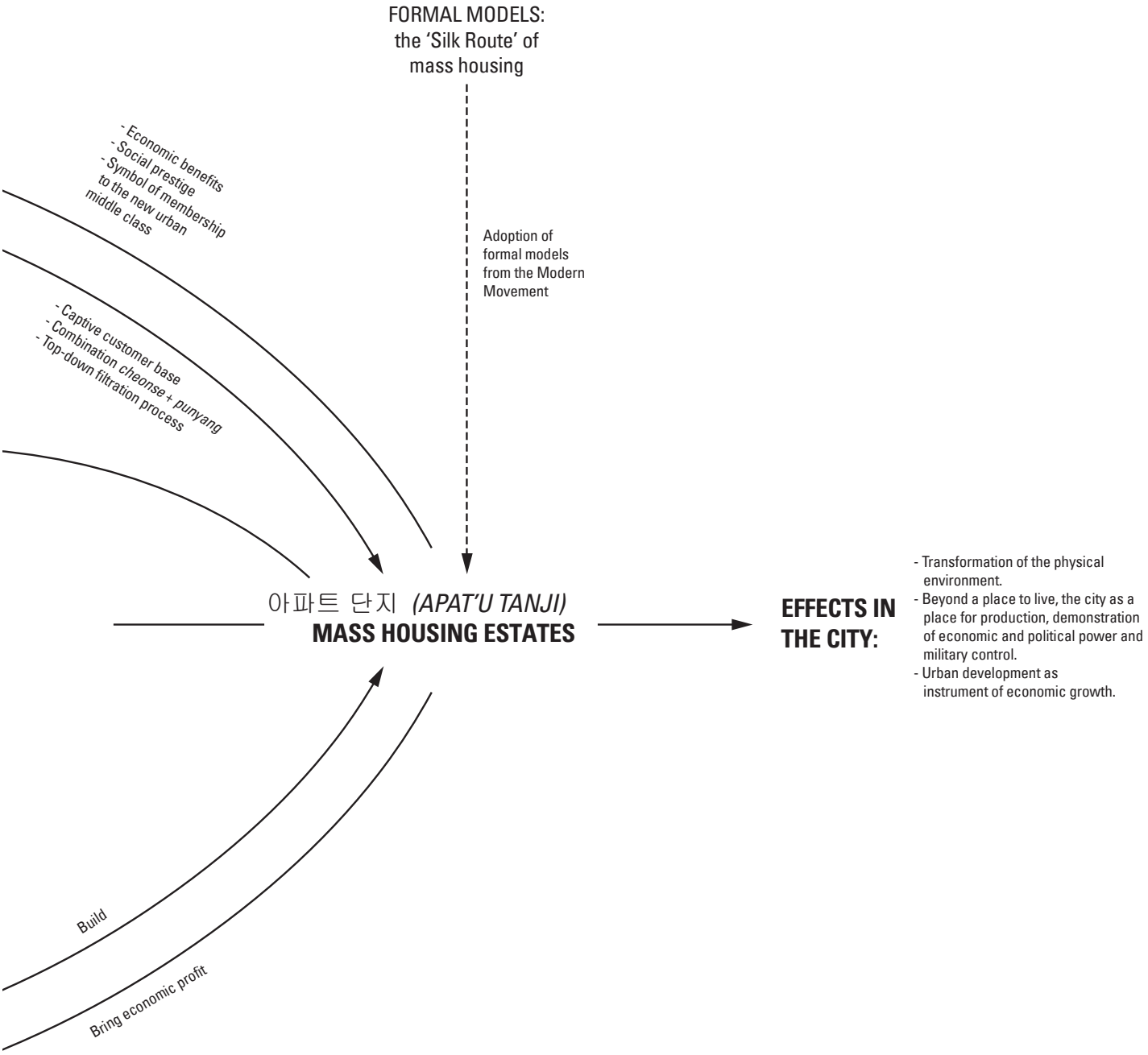


Figure 5-4. Actor Map of Seoul's Mass Housing Model. Based on an original diagram entitled *"La Boucle des Tanji"* by Valérie Gelézeau in *Séoul, ville géante, cités radieuses*, p. 171.

homes (Ha, 2002; Habitat International Coalition, 1996, p. 246).

Seoul's mass housing estates were established as a social contract among the main actors of the developmental regime: the authoritarian estate, the private construction corporations and the emerging urban middle class.

This social contract is illustrated as a constellation of interests among the aforementioned parties in Figure 5-4, based on an original diagram by Valérie Gelézeau (Gelezéau, 2003, p. 171). The rest of this chapter will explain this constellation of relations.

5.2 ROLE OF THE STATE

State intervention in the apartments took place mainly through a housing policy that included:

- mass housing policy
- a minimum level of government investment
- promotion of access to real estate
- aid for construction
- implementation of a propaganda machine
- consideration for national economic growth policies.

These features are explained below.

5.2.1 Mass Housing Policy

The mass-housing policy was a response to the city's chronic housing shortage, which reached 50% in 1966[5], fueled by President Park Chung-hee government's policy of providing most economic opportunities in the capital city and by the fact that those economic improvements were initially used to create an industrial base, ignoring the housing problem.

Legislation

Imposed by the Japanese colonial authorities, the 1934 Urbanism Code was Korea's first piece of legislation on land management. The Code gave government sole control over urban development operations. The Land Expropriation Law, which was published at the same time, allowed for the compulsory transfer of land for public works. The fact that many land management powers were given to the Ministry of Construction is evidence that local planning was subject to central government decisions.

The legislation was updated in 1962 by the dictatorial regime that had recently seized power. It created a new Urbanism Code (*toshi kyehoek pop*), a new Construction Code (*konch'uk pop*), a new Land Expropriation Law and a Land Planning Law. These laws sought to respond to the urban changes required by the industrial and economic policies introduced. They formed the legal back-

5 See Figure 4-3 on page 81.

drop for two laws that were essential for the emergence and development of the *apat'u tanji*: the 1972 Home Construction Acceleration Law (*chut'aek konsol ch'okchin pop*) and the Urban Renewal Law 1976 (*toshi chae kaebal pop*).

Even though Park's regime was established in 1961, it would not be until the third Five-Year Economic Plan (1972-76) when a proper mass housing policy would be implemented. The 1972 law –one of the first measures taken after the October Yushin reform that year[6]– was essential in defining the role of private construction firms and that of apartment complexes in South Korea's housing policy. It abolished the previous Pubic Financed Housing Law and incorporated private construction firms into the financing of public housing. As a direct result of the law, the government promoted the building of 2.5 million homes over 10 years, thus consolidating the urban development of the south bank of the river, as we shall see later. The law introduced government-approved incentives to private construction firms to ensure it was profitable to build apartments. The *punyang* system allowed construction firms to start the foundations once they had received the deposit for contracts, and they could use these contracts to apply for mortgages from the Korea Housing and Commercial Bank. In 1977, the Housing Construction Promotion Law underwent a thorough review to further facilitate the development of apartment complexes by the private sector (Sohn, 2003, p. 300).

Space was required for the new housing sectors, so planners envisaged expanding the city toward the right bank of the river, beyond the historical boundary, through the Gangnam Development Plan. The Provisional Law for the Development of Special Regions was passed in 1972 to encourage financing and tax breaks for projects to build apartments in Gangnam and Yeouido. Although the law was initially supposed to remain in force until 1975, it was extended until 1978 (Sohn, 2003, p. 300)

The third five-year cycle marked the start of the economy's Big Push toward heavy industries and chemical industries. This coincided with the availability of capital amassed by the nascent Korean companies thanks to infrastructure contracts with the US Army in Vietnam and in the Middle East, and with the return of troops and workers from both regions following the end of the Vietnam War and the onset of the 1973 oil crisis. These two factors attracted large construction firms back to South Korea, allowing the country's large conglomerates to grow. New areas were earmarked for the building of apartments (*ap'at'u chigu*) through the *'Shijong chohap kaebal'*, the General Urban Development Plan for 1972-1982.

Programs

As explained above, the development of the south bank of the river, starting with the Banpo and Jamsil complexes, was developed to achieve the goal of building 2.5 million homes in 10 years. There were several reasons to justify the city's expansion across the river, including military security against a possible attack from North Korea (especially after the 1974 assassination of First Lady Yuk Yeong-su, the wife of President Park Chung-hee) (Sohn, 2003, p. 269), as well as land speculation, overpopulation and excessive industry in Gangbuk (meaning 'north bank'), and the Modern Movement's hygiene-related goal of escaping the congestion of traditional city life. During the colonization of the south bank, major infrastructure was built to control the river and prevent flooding, the first bridges were built to replace ferries, and planning began for the country's first freeway, which would connect Seoul to Busan in the south of the country. This freeway would eventually become a major development corridor.

It was also during this period that planning began to make the island of Yeouido a new administrative center and development model. The island's role as an urban model is reflected in the informal names used by the regime's technocrats. Yeouido (which in Korean means 'useless') became known

6 The October Yushin reform was a self-coup by General Park Chung-hee following his third consecutive general election win in 1971. In October 1972, Park dissolved Parliament and suspended the Constitution, replacing it with the Yushin Constitution, which made Park's presidency a de facto dictatorship, increasing the leader's powers. The Korean term *yushin* (유신) means renewal, but it also comes from the Japanese term *Meiji-ishin* used to describe the Meiji Restoration, referring to the similarity between the president's autocratic nature and the way the Japanese Empire was created.

as ‘Seoul’s Manhattan’ or ‘Korea’s Wall Street’. Kim Swoo-geun, an architect for the regime, had made a planning proposal in 1969 based on the Japanese Metabolism style, but his proposal was never implemented[7].

Management and Planning Tools

The main planning tool used to implement these urban expansion projects driven by the housing shortage was the Land Readjustment Plan.

Land readjustment plans are a mechanism to facilitate urban growth by developing agricultural land efficiently, at no cost to government or to the original owners. They also allow the area’s development to be coordinated as part of a broader urban planning project. First, all the original plots are merged into a single plot, then infrastructure and services are set up, and finally the plot is divided once again into properties, which are returned to the original owners. The new plots are smaller than the original ones, since land is used for providing infrastructure and services and to finance the operation, but the final plots are more valuable, since they are developable and the price of the land has increased. In some countries, the state may also require land to be transferred for public facilities or public space (Navarro Acebes, 1994, p. 47).

The use of plot readjustment projects has been justified in many Asian countries during periods of extreme urban growth on the basis that each project is economically independent, they enable urban growth to be managed efficiently and quickly, they are seen as a pro-hygiene mechanism, and they increase land prices. Another very important requirement for the emergence of large apartment complexes was that they be managed independently from the rest of the city. The system was introduced to Korea during military occupation by Japan, where it had already been widely used since the urban renewal that took place during the Meiji period (1868), following its introduction by European architects and technicians brought in to modernize the Japanese capital. The method was officially documented in the 1919 Urban Planning Act and played a key role in the rebuilding of Tokyo following the devastating Great Kanto Earthquake of 1923 (Kigawa et al., 2007, p. 14).

The mass-housing projects of the 1970s took place in accordance with the Land Readjustment Project Law. A reform to that law in 1975 allowed land to be reserved for apartment complexes in areas with readjustment projects, and in 1976 the Apartment District System was approved, imposing the building of complexes in those areas (Sohn, 2003, p. 300).

5.2.2 A Minimum Level of Goverment Investment in Housing

Despite the spectacular increase in production under General Park’s regime, the state invested only 1.6% of general domestic product in the 1960s, 4% in the 1970s and 4.5% in the early 1980s (Gelezéau, 2003, p. 155).

Korea’s housing policy dates back to 1957, when the founding principle that would influence the following 14 years was officially established. The idea was that everybody, including those most economically disadvantaged, would have to make material sacrifices to obtain a home (Gelezéau, 2003, p. 153). The policy improved higher-income households’ access to housing, and was based on a ‘filtering process’ under which wealthier households had better access to new homes, with their old homes being made available to lower-income households. This process tended to result in families constantly moving house, some into the brand-new apartments, others into the homes left vacant by those who had moved out (Gelezéau, 2003, p. 153). In 2010, families moved every 7.7 years on average[8], in a process known as ‘modern urban nomadism’. This process reveals the constant turnover of people in the city, fueled by land speculation.

As Sohn Sei-kwan explains, at the start of the second five-year period (1967-1972) the government announced a campaign to build apartments in areas with marginal urbanization to deal with the housing problems of lower-income households and to enable urban growth in an orderly manner

7 See ‘3.5 Youido Plan’ in Chapter 3, Volume 02.

8 Ministry of Land, Infrastructure and Transport, 국토교통부 (2012).

that would support economic development (Sohn, 2003). From the 1968 housing budget, 800 million Korean Republic won were allocated to this task in the main cities: Seoul, Busan, Daegu and Incheon. This made up 40% of the total budget, with an additional 40% provided by local governments and the remaining 20% paid by the future homeowners.

In Seoul, Mayor Kim Hyeon-ok decided to allocate 80% of the profits from the sale of plots on the island of Yeouido (around 24 billion wons) to build 2,000 citizens' apartments between 1969 and 1971. The apartments were between 8.5 and 10 *pyeong*[9] (28 to 33 m^2), and future residents would receive grants for between 200,000 and 250,000 won, which they had to return within 5 to 15 years. Despite the good intentions, the buildings erected had many structural problems due to the speed with which they were built; the lack of due care and attention (lack of geotechnical studies, poor-quality materials, etc.); and corruption among public officials responsible for them. The situation was so dire that the Wau apartments collapsed while fully occupied in 1970, just four months after completion. The five-story building came down due to structural deficiencies, killing 23 people and injuring a further 39. Following the accident, the police conducted technical investigations on similar buildings throughout the country and found 84 buildings with similar deficiencies.

The accident forced the mayor to resign and the housing policy for low-income households was abandoned. Starting from the third five-year period, housing policy focused on facilitating the provision of private housing for the growing middle class that had been emerging in the city thanks to the successful economic policies of the first two five-year periods. This was a key turning point: housing went from being the recipient of state investments to a form of state financing.

State intervention was no longer so much in the form of direct investment in housing (which, as explained above, never exceeded 5% of GDP after the 1960s) as in the form of indirect control and action, especially through strict regulation of the sector's financing and management (Gelezéau, 2003, p. 145). A special partnership thus developed between government on the one hand and construction firms and private promoters on the other, with government acting as a facilitator of private economic activity, in addition to implementing its economic growth strategies.

5.2.3 Promotion of Access to Real Estate

The policy of access to private property owes its success to the enforcement of below-market house prices and methods used to make large quantities of capital accessible to the public. To facilitate access to home ownership, the government implemented a system to control the prices of apartments, maintaining them below their real market value. This was possible because the government controlled land prices, purchases were made before the apartments were built, and the government made construction and finance grants available to privileged construction firms.

The government asserted control over the price of the apartments by implementing the *punyang* system through a 1977 amendment to the 1972 law. The amendment prohibited construction firms from directly selling properties in complexes with more than 20 housing units. Sales of such properties had to be conducted through a complex lottery system operated by the Housing Bank. Whoever wanted to buy an apartment first had to open a savings account and make a fixed monthly contribution. By holding the savings account, they could register on one of three lists (*sunwi*) with different priority levels. The average waiting times were two years for list 1, one year for list 2 and less than a year for list 3.

9 The *pyeong* is a traditional Korean measurement of surface area of Chinese origin. Like the Japanese *tsubo* (twice the size of a *tatami*) and the Chinese *ping*, it is equal to about 35.6 square feet, and is said to be equal to the surface area occupied by an average person lying on the ground with their limbs extended. Although a 1961 law forced traditional units of measurement to be replaced with the metric system, the *pyeong* remains the standard unit used in real estate transactions to this day. See an article in The Hankyoreh, available at http://www.hani.co.kr/arti/english_edition/e_business/217817.html.

Those registered on one of the lists could then be included in the Housing Bank's lotteries, which took place every two months. The Bank would announce the winners of the draw in major national newspapers, including in the *Chosun Ilbo*. The sale would take place based on the plans drawn up before construction began, so buyers would have to wait between one and three years before moving in, allowing them to pay in five or six installments (Gelezéau, 2003, p. 146). Construction firms wanting to benefit from the *punyang* system had to abide by the maximum prices set by the state, which were below market value. The price was equal to the price of the land, which varied from city to city (or from district to district within Seoul), plus the standard construction price set by the Ministry of Construction.

The system went through various changes between its initial implementation in 1977 and its abolition in 1998[10]. In 1982, the government sought to control costs by introducing modular coordination (*kuyjong ch'isu*) to standardize construction material. In 1983 it introduced a system of treasury bonds (*ch'aekkwon chedo*) to curb speculation. Those selected in the housing lottery in Seoul had to buy treasury bonds up to a maximum amount set by the city council. The amount depended on the specific *tanji*. The measure was effectively a heavy tax on the purchase of apartments and was designed to reduce speculation while increasing government income. For buyers, it represented an additional obstacle to buying a home, since candidates were prioritized on the list according to the number of bonds they had purchased.

The *punyang* system did, however, require buyers to make a large initial payment. This, coupled with the fact that Korean banks would refuse mortgages to some people based on their credit record[11], meant that potential buyers needed significant initial capital or had to use the country's traditional *jeonse* rent system to accumulate capital. Under this system, rather than making non-recoverable monthly rent payments, tenants pay an initial large deposit equal to between a third and half of the real price of the home. The owner receives from the revenue that this money generates every month, and when the contract is terminated, the full amount is returned to the tenant. When a new contract is signed, the payment is adjusted according to inflation.

There was huge demand for this system. In 1994, in Seoul alone there were 500,000 *punyang* applicants, but only around 65,000 new homes were being built every year.

Following the crisis in the winter of 1997, the system was fully liberalized and house prices increased to their true market value (Gelezéau, 2003, p. 148). The combination of *jeonse* leases and *punyang* advance purchases that formed the policy on access to real estate under Park Chung-hee's regime had the following consequences:

- The combination of strategies to facilitate the purchase of apartments made it an absurd choice to remain a tenant, since the exorbitant cost of the *jeonse* was not much less than the initial payment required to purchase an apartment.
- Because new apartments were sold at below-market prices, any other alternatives in the housing market practically disappeared.
- Only families that had an initial capital base, either through real estate ownership or a *jeonse*, and the capacity to obtain the rest of the capital required could benefit from the policy on access to real estate. Lower-income social classes were excluded from the process, and were therefore unable to move into *apat'u tanji.*

The policy therefore perpetuated the growing social divide between those who were well-off and those who were disadvantaged and led to the city's division into poorer and richer neighborhoods (Gelezéau, 2003, p. 48). This geographical stratification would eventually also become visible within the apartment complexes, according to the height or size of the residential units.

10 Until the end of the 1997 Asian financial crisis, which led to major changes to the country's economic systems, in line with World Bank and International Monetary Fund requirements.

11 Until the late 1990s, mortgages for private individuals were almost non-existent. Before they would provide a loan, Korean banks required very strict guarantees that few people were able to comply with, such as a personal property mortgage, a detailed financial history and salary guarantees. Even today, getting a loan is a strict process.

5.2.4 Grants for Construction

Under the 1972 law, the state introduced two kinds of additional actions to boost construction:

- At the local level, the urbanization of residential land was facilitated through readjustment operations, in which the state was the only authorized party, through the Korea National Housing Corporation (*Taehan Chut'aek Konggsa*), founded in 1962, and the Korea Land Development Corporation (*T'oji kaebal konggsa*), created in 1978.
- Aid was provided to the construction sector in general for the standardization of building materials, incentives for research and development, etc.

5.2.5 Propaganda Machine

Popular support for the apartments was promoted through government propaganda and Taylorist management strategies. The ideology of gigantism that dominated during the 'Miracle of the Han River' was based on setting production records and on the dogma of 'quantity and speed'. At the same time, this ideology was part of a huge crusade to out-develop North Korea's communist regime.

As explained in 4.4 'Evolution of Housing Demand'[12], Seoul's residential landscape in the early 1960s consisted mainly of single-family, single-story homes. Over the following 30 years, the situation reversed until the residential landscape was dominated by apartments. This transformation would not have been possible without profound changes to people's lifestyles, habits and aspirations. Initially, people were against the idea of apartments[13]. A study conducted by a group of sociologists in 1971 in a small *tanji* found that fewer than 2% of those living in that complex were satisfied with life in the apartments (Lee, 1971).

Below is a summary of the social engineering process that enabled these changes:

Apat'u tanji pilot project: the Mapo Apartments

The Korea National Housing Corporation was founded in 1962, at the start of the first five-year cycle, and one of its first projects was the construction of the first apartment complex in Seoul. The complexes were clearly intended to be used as propaganda:

- To build a modern national identity, expressing the desire for national reconstruction and projecting the image of the new Korea.
- To demonstrate the benefits of modern civilization by improving housing conditions through the apartments.

Apartment blocks had already been built during the previous decade –the Haengchon Apartments in 1956, the Chongam Apartments in 1958, and the Gaemyeong Apartments in 1959– but they were always single, isolated buildings, rather than part of a set of apartment blocks or a *tanji*. This was because the country lacked the necessary construction technology and materials.

The Mapo Apartments, built on the grounds of a former Japanese colonial prison in the southern outskirts, provided an opportunity to test a series of Western innovations. Firstly, the rooms were distributed around a living room. Secondly, the units had balconies facing two directions to ensure good ventilation and exposure to sunlight. Thirdly, each building was six stories high (although they were initially designed to have ten stories) and featured a Y-shaped plan with a shared, central stairwell and a longitudinal outer corridor to access the units. Fourthly, since only 11% of the land was initially occupied, there was space for large garden areas (the complex became denser during a later stage, when linear blocks were built around the perimeter).

The use of advanced materials and construction techniques made the apartments more expensive than traditional buildings, so they attracted higher-income people such as professors and salaried *chaebol* staff. This bestowed a sense of prestige on the new building type, as did the fact that they were christened 'dream homes' or 'cultural homes'.

12 See Chapter 4, Volume 01.
13 See Figure 5-5 on page 101.

In conclusion, although the building project was unable to incorporate many of the advances initially planned (10 stories with an elevator rather than 6 stories without one; central heating and modern bathrooms with a lavatory and running water), the success of the Mapo Apartments was a key factor in the start of a new housing culture in Seoul. The Mapo Apartments made the *apat'u tanji* an attractive proposal by showing that:

- Land could be used more densely than for the small, single-family homes that were previously the norm[14].
- Technology, materials and local manpower could be used to build them.
- Korean society could adapt to this new form of community life.
- Apartment complexes were the solution to the lack of housing and could improve urban infrastructure (Sohn, 2003, p. 254).

Based on this pilot project, during the second economic cycle a policy was drawn up to build very basic apartments to rehouse those living in the self-build neighborhoods.

Widespread adoption of apartment complexes by higher-income households

In 1971, work began on *Dongbu-Ich'on-dong*, a vast complex on embanked land between the north bank of the river and the southern perimeter of the Yongsan US military base. The aim was to change public opinion following the collapse of the Wau apartments the previous year by demonstrating that the government's housing policy had changed.

The complex was built for very specific occupants: 23% of the occupants would be working class, 40% civil servants, 15% foreigners, and the remaining 21.5% from the higher social classes (Sohn, 2003, p. 111). This was reflected in the wide range of apartment sizes (45 to 240 m^2) and the adoption of Western-style kitchens and bathrooms, central heating, security guards and shared facilities. These innovations substantially improved housing in a society where the vast majority of homes were heated using charcoal briquettes and had outside lavatories. Another significant innovation introduced was the typical layout used for the apartments. The layout was a unique hybrid of the traditional Korean home (*hanok*), based around a central courtyard, and the Western model of a clear division between living and sleeping areas, with the living room as the central feature. The floor plan imposed therefore revolved around a south-facing living room connected to a north-facing kitchen, forming a floor-through apartment with ventilation passing all the way through the apartment. The other rooms were placed on each side of this central area. This layout and variations thereof became commonplace, and illustrate just how uniform lifestyles became[15].

The luxury apartments were promoted through an intense marketing campaign, with model houses being built before construction began. The sales technique caught on, and is still used today. The association that this technique created between the social prestige of the upper classes, westernization, modernity and apartments was highly effective at stimulating the aspirations of the emerging urban working class.

Given the success of the housing operations in *Tongbu-Ich'on-dong*, land was also developed in a similar fashion, in accordance with the *Shijong chohap kaebal'* (General Urban Development Plan for 1972-1982), on the island of Yeouido, as well as on the south bank of the river, where the Banpo complexes were built in 1974 (4,000 homes for 15,000 residents). These projects were still managed by the public sector through the Korea Land & Housing Corporation with funding from the International Development Association.

14 See Figure 25-7 on page 401.

15 Section 5 'The Unit Scale' of this research will deal specifically with that.

Figure 5-5. Cartoon published in a 1960s newspaper illustrating people's consternation when they saw the new type of home, especially their fear of sleeping so high above the ground.
Origin unknown, taken from Jeong, Lim-jung and Park, Jin-hoe: '대한민국 아파트 발굴사' (*The early days of apartment complexes in Korea*), Seoul, 효형출판 Eds., April 2009.

Campaign to discredit the traditional city and to move services to the south bank of the river

As Gelézeau explains, the state-planned urbanization of the south bank of the river was accompanied by a series of measure to convince the wealthier social classes to move out of their traditional neighborhoods around the old city and to set up home across the river (Gelezéau, 2003, p. 34). The strategy therefore involved intentionally portraying the old city in a bad light and establishing a series of over-simplistic comparisons between the two models of city that are still popular today: north vs. south bank; tradition vs. modernity; chaotic and organic urban fabrics vs. efficient and modern urban structure; unhygienic vs. hygienic buildings; high-income vs. low-income households; good vs. mediocre schools[16].

The specific measures were:

- Relocating companies with skilled, high-income workers to Gangnam.
- Redistributing schools, helping the best educational institutions to move to Gangnam by offering tax benefits and cheap land. This came to be known as the 8th school district (*p'al hakkun*). The importance of high-quality education in the geographical strategy used by Koreans when deciding where to live is explained by the Confucian context, in which the intellectual professions are held in high regard. So, the social symbols of belonging to the new urban bourgeoisie include owning an apartment on the south bank of the river and having access to a prestigious school, most of which are located on the south bank. That is why the names of the various schools, and even the name of the 8th school district (abbreviated to *p'al hak*), became a fundamental part of the marketing strategy used for the apartment complexes in the area.
- Providing mechanisms to help the wealthier and socially prestigious classes buy an apartment. This strategy had been used since the first apartments were built, such as the Chongam Apartments (1958), which were designated to politicians, artists and university professors. As already explained, this happened in the pilot projects *Mapo Apartments* (1961) and *Tongbu-Ich'on-dong* (1971), which included salaried workers at the *chaebol* and government bureaucrats. In the 1970s, the apartments became widespread on the south bank of the river (Gangnam), thus consolidating the policy of attracting society's elite to the south bank apartments. People's initial negative perception of the apartments had therefore changed.
- Offering incentives for the political and intellectual elite to buy a home and implementing policies to reverse the brain drain during the dictatorship. The government offered a number of incentives to scholars and intellectuals willing to return to Korea and co-operate with the regime: it would pay repatriation costs, provide a comfortable job position and provide a home in one of the growing districts on the south bank (Gelezéau, 2003, p. 37).
- Building infrastructure: the third bridge across the Hangang (today known as Hannam Bridge) in 1969, the Gyeongbu Expressway from Seoul to Busan in 1970, the Express Bus Terminal for long-distance buses in Banpo in 1975, the circular subway line in 1975, and hydraulic work to embank the river and control intermittent flooding during the summer rainy season[17].
- Following approval of the 1972 Provisional Law for the Development of Special Regions, restrictions were placed on the opening or remodeling of commercial establishments on the north bank. Strict controls were introduced on new commercial licenses, markets, factories, large warehouses and leisure and entertainment premises such as nightclubs, cabarets, tea rooms and hotels. At the same time, tax exemptions were introduced for housing developments on the south bank. Finally, in 1975, the government banned all new real

16 See Figure 5-7 on page 103.

17 See the series of plans showing the development of Seoul's apartment complexes in relationship to the development of infrastructure in Chapter 4, Volume 02.

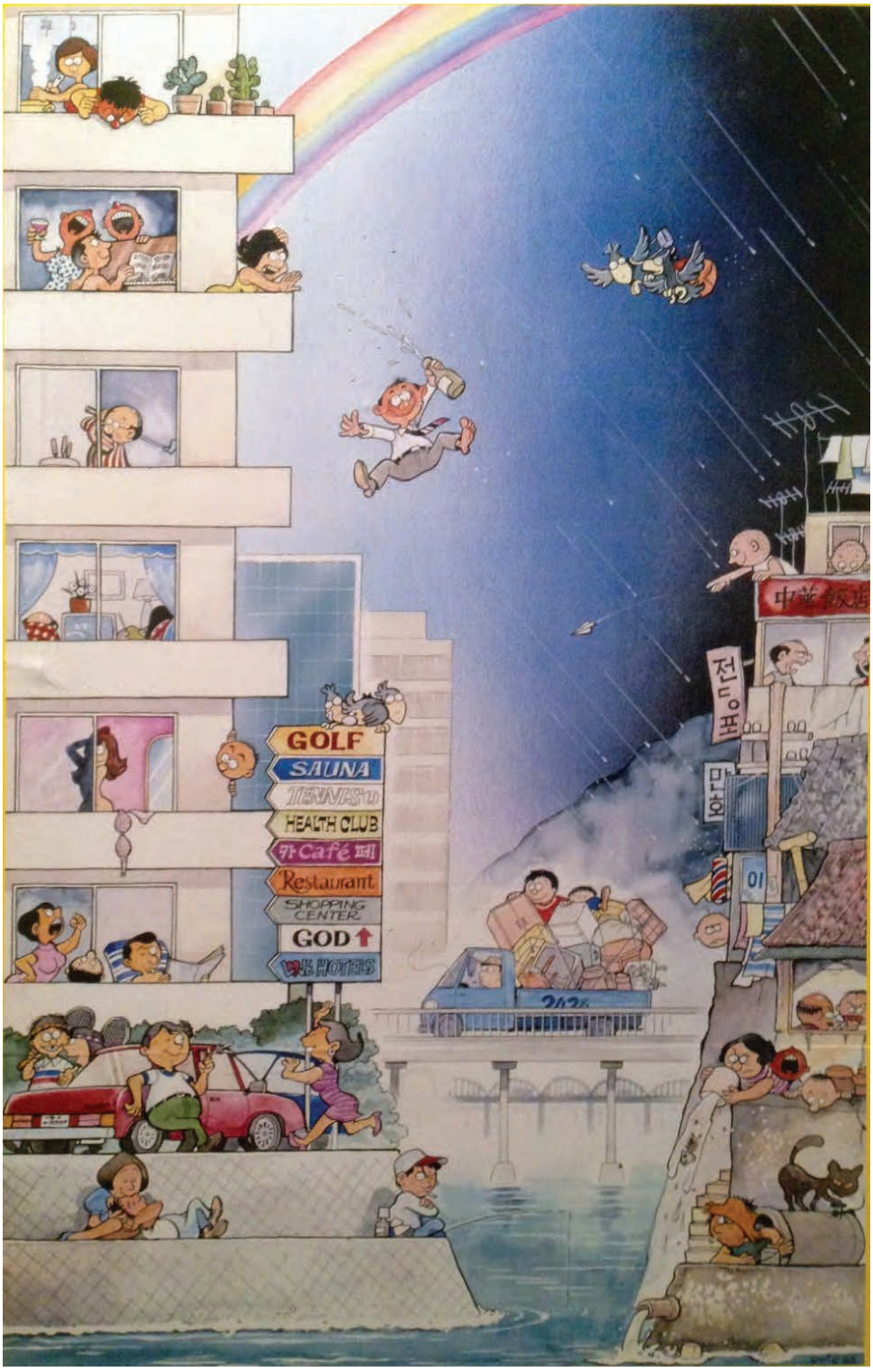


Figure 5-7. 신천지로의 이주 **(Emigration to the New World), Lee Won-bok (1980).** Satirical cartoon illustrating the contrast between the "old world" to the north of the Han River (on the right) and the "new world" to the south (on the left). From the exhibition *"The Republic of Apartments"* at Seoul Museum of History from June 3rd through June 5th, 2014.

estate developments in Gangbuk (Sohn, 2003, p. 270).

- Public commitment to the apartments was promoted through popular, military-style advertising campaigns such as '*Chut'aek konsol ibaengman ho!*' (*Operation Housing: 180 days!*), which allowed the first four tanji in Jamsil (11,821 apartments) to be built in less than a year thanks to the 280,000 workers who were mobilized (Gelezéau, 2003, p. 112). The popular nature of the campaigns and the use of populist slogans were not dissimilar to socialist propaganda, even though the aim was to encourage the population to adopt the development model set by the state and to join the production line and market dynamics.

Until the 1970s, the state used these social engineering and marketing strategies to change how people perceived the apartments. Because the new lifestyles were embraced by the wealthier classes, the whole of society became aware of the apartments. Using an imported, imposed model, mass-housing complexes became an object of desire during the economic development and upward social mobility that characterized the Miracle on the Han River. By supporting some parts of the city to the detriment of others, these strategies led to the development of a 'geography of desire' based on socioeconomic factors. Between 1977 and 1985 alone, 49,280 homes were built in 681 buildings within 16 *apat'u tanjis* on the south bank of the river (Sohn, 2003, p. 271).

5.2.6 Housing Policies Subject to National Economic Growth

The housing policy introduced under General Park's dictatorship was incorporated as part of centralized economic planning, which was rolled out through a series of five-year economic plans to regulate the economy[18].

Housing policy was thus centered around centralized economic planning based on production efficiency criteria similar to those established by Taylor in terms of industrial production. The capital city's urban development was aligned with national economic growth objectives based on efficiency, quantity and speed.

As Valérie Gelézeau explains, the housing policy adopted by the regime, especially starting from the third five-year cycle, had generic features that existed in housing policies around the world, but also its own unique features (Gelezéau, 2003, p. 157):

- *Apat'u tanji* enabled the extremely fast transformation of a rural agricultural society into an urban industrial society between 1960 and 1990.
- This housing policy was both the means and the end of the growth model imposed by the dictatorial state.
- Unlike the models introduced around the same period in Hong Kong and Singapore, Korea's model was not introduced through social housing campaigns.

18 These five-year plans were a typical feature of the Soviet Communist Party's centralist planning to boost the USSR's economic development from 1928 onward, and also featured in the planning of many other Communist states. Similarly, they were adopted by states with capitalist economies and became an example of the adoption of theories on the rationalization of industrial production, irrespective of the politico-economic system.

5.3 THE ROLE OF THE PRIVATE CONSTRUCTION COMPANIES

The state's management of production resources and, more importantly, its partnership with large private corporations were vital factors behind the extraordinary economic growth that began in Korea in the 1960s. This alliance was based on the shared objectives of national development and economic profit. Alice Amsden has recounted how President Park Chung-hee's dictatorship pushed the role of the state beyond mere protectionism. She described South Korea as an exemplary late industrializing country in which the state was the main driver and planner of all stages of industrialization: the initial substitution of imported cement, fertilizers, refined oils and synthetic fibers with domestic products; the increase in the productivity of textiles; the Big Push from light to heavy industries in the third five-year plan; and eventually, the substitution of imported electronics and cars. Since the state was the main national entrepreneur, Amsden coined the phrase 'Korea Inc.' (Amsden, 1989, p. 400).

The state went beyond subsidizing certain companies to boost growth. It implemented strict performance standards in exchange for subsidies by associating stimulus, control and repression. In construction, like in any other industrial sector, the state set performance standards and penalized industries that did not achieve them, while rewarding those that did (Gelezéau, 2003, p. 162). Although the state would guarantee long-term, negative-interest loans to the *chaebol*, in return, it would require the capital to be used productively, rather than speculatively, or require companies that were still allowed to sell within the protected domestic market to produce also for the export market (Amsden. 1989, p. vi). These production standards enabled the state to impose certain trends in how the city evolved. For instance, in the early 1990s, prizes were given to firms that built apartments that were more than 20 stories high. This strategy was directly linked to a policy to increase the density of satellite cities and to renew interurban complexes (Gelezéau, 2003, p. 162). Within this strict system of production control, the following criteria had to be met for a construction firm (*tungnok opch'e*, or registered builder) to be registered:

- A minimum capital of 100 million won for companies, or 200 million won for individuals.
- Two employees officially licensed in architecture or civil engineering.

Registered construction firms were exempt from paying tax on land purchases and on the building of apartments with a surface area of less than 85 m². The government would designate specific construction firms based on their job history and technical capacities (*chijong opch'e*, or designated builder). The requirements for 'designated builders' were more stringent:

- A minimum capital of 3 billion won.
- An average of at least 300 homes a year over the past three years.
- At least six engineering graduates on the payroll.

Designated builders have access to better fiscal benefits (Shin, 2004) and are authorized by the government to participate in mass housing operations and public procurement processes (Gelezéau, 2003, p. 161).

In the mid-1970s, there was a major shift in housing policy, with private construction firms beginning to gain ground on public developments. By 1979, the majority of homes were being built by the private sector.

There were four main factors behind this change:

- It was believed that the general public had changed their perception toward apartment complexes. The complexes had been introduced as a new product on the market, and demand had been ensured by making potential users aware of the product's convenience and the lack of alternatives.
- Private companies were in a position to consider managing, financing and building large developments like the residential complexes on a large scale. In the early days of Park Chung-hee's dictatorship, there was neither

the technology nor the materials or experience to deal with such a huge project, which is why the state launched the Mapo Apartments as a pilot project. The start of the big leap toward heavy industries and chemical industries, when the third five-year economic cycle began in 1973, completed the consolidation of the large conglomerates. This reshaping of the economy was no accident. It coincided with the withdrawal of Korean troops from Vietnam. Korean construction firms therefore also withdrew, having gained money and experience thanks to infrastructure contracts for the US Army. After returning to Korea, the construction departments of the conglomerates turned to the domestic market and to heavy infrastructure work in the Middle East (Gelezéau, 2003, p. 159). Consequently, between 1971 and 1974, the main apartment complex development contracts went to Hyundai, Hanshin, Hanyang or Samik. These companies were joined by Life, Daerim, Samho, Kyonghyang and others in 1975, while Woosung and Shindoga emerged toward the end of the decade (These companies were 'designated builders'). The early 1980s witnessed a fresh wave of new apartment developments, thanks partly to the return of Korean construction firms from the Middle East as a result of the 1979 oil crisis and subsequent political instability in the region.

- New technological innovations appeared, cutting costs and reducing execution time. To comply with the price limits and terms set by the government and make a profit, private constructors had to innovate to optimize the construction process. The Hyundai Apartments in Apgujeong began to roll out advanced techniques imported from abroad, such as the use of reinforced concrete slabs, prefabricated components, and efficient construction management techniques.
- The introduction of the *punyang* system in 1977 rationalized financing and sales and fixed sale prices, and therefore construction prices.

The *tanji* built by the Hyundai corporation in Apgujeong was one of the first apartment complexes built under the policy to support their private development. The developer built its first large complex between 1976 and 1979 on land provided by the municipality in a central area on the south bank of the river. The complex had 3,274 homes in more than 40 buildings that were between 5 and 15 stories high. Many of the features were very modern innovations at the time (central heating, modern kitchens and modern bathrooms), and the apartments were large, ranging from 80 to 240 m^2 (Gelezéau, 2003, p. 115). The construction firms added to the state propaganda campaigns, offering favorable terms to senior officials and influential figures in order to attract them.

5.4 THE ROLE OF THE URBAN MIDDLE CLASS

The general public's contribution to the growth and spread of the apartment complexes included the following factors:

- There had been a chronic housing shortage since the Japanese colonial era, creating unprecedented demand for housing despite the insufficient supply.
- The population therefore became a captive customer base with few housing options to choose from.
- As the complexes became widespread in the 1970s, the population began to gain access to real estate, which became a tool for economic benefit. A brand-new middle class therefore emerged.
- The apartments became a symbol of belonging to this urban bourgeoisie, and therefore a symbol of social status.
- The prospect of becoming rich through the housing market fueled speculation.

These factors are explained in the following subchapter.

5.4.1 A Chronic Housing Shortage

The complexity and impact of the shortage have already been addressed at large in Chapter 10, Volume 01. For the purpose of understanding the role of the urban middle class in the emergence of the *apat'u tanji* model, though, it is important to highlight a few aspects. In the 1960s, the city was overwhelmed by demand for housing due to a series of unfortunate events in the past:

- Agrarian reforms introduced by the Japanese left many farmers without land.
- Japanese colonization brought incipient industrialization to supply the Japanese war machine, creating new job opportunities in the city, which attracted people from rural areas. However, the colonial authorities were not concerned with improving the living conditions in the capital.
- The Korean War caused great destruction, with the front passing through the capital city at least twice, causing many homes to be lost.
- First, Japanese colonization, then World War II, then post-war political instability as the Cold War began, and finally the Korean War caused a long period of political and social instability during which many refugees returned to the country for a number of reasons. Some returned from political exile in Manchuria, where many people had been deported by the Japanese, others fled from communist North Korea, and others returned from elsewhere.
- The economic policies of Park Chung-hee's regime were initially intended to activate the economy, so the housing problem was ignored.

This series of factors, in addition to the political and economic instability, wars, and the shortage of economic and technical resources in government delayed any solutions to the housing problem. The situation became critical in 1966, when the housing shortage reached 50%. This meant that half the population lived in informal housing (see Figure 4-3 on page 81).

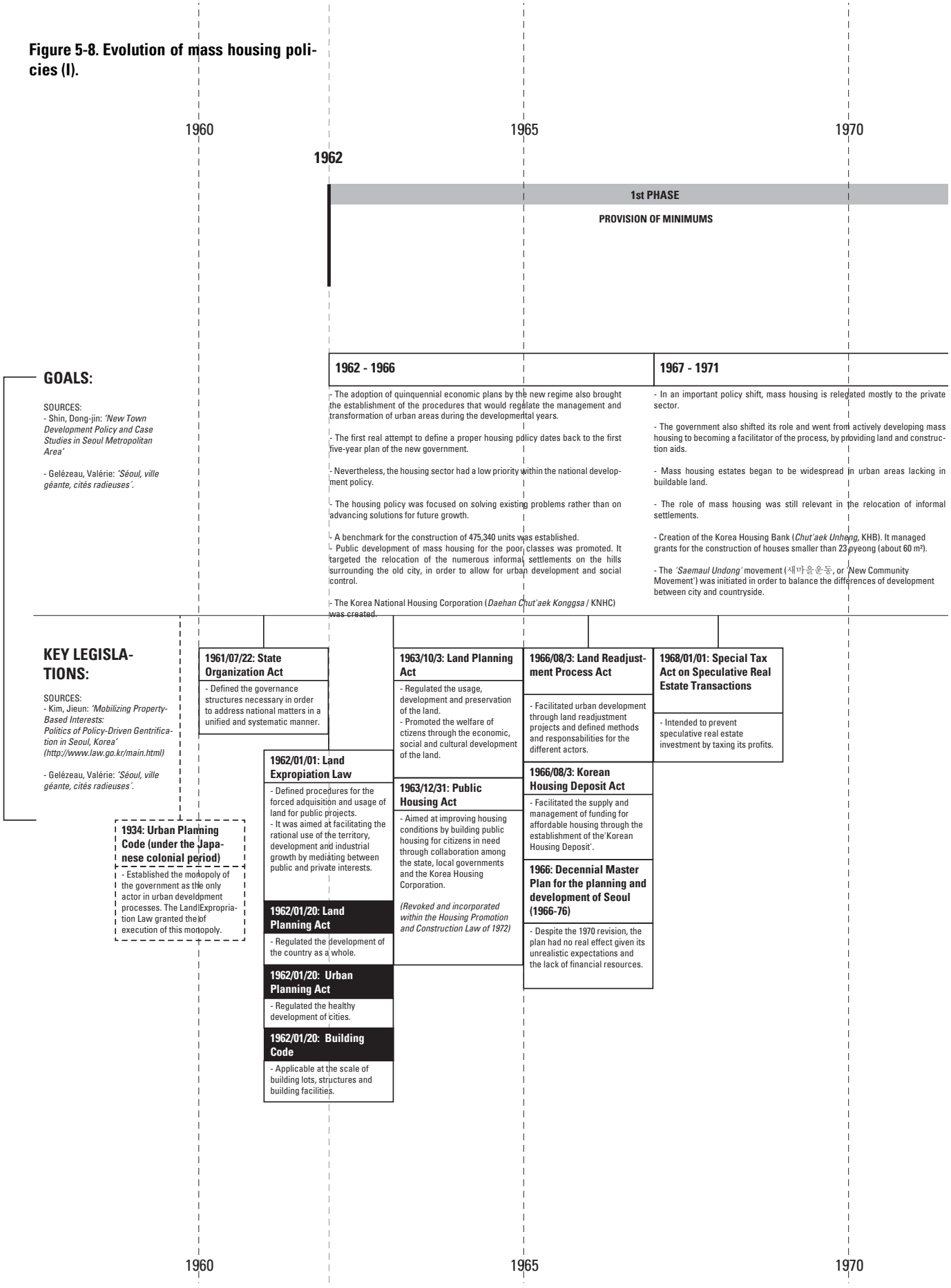
The period is known for the illegal settlements that spread along the riverbanks, across the surrounding hills (the *tal tongnae*, or 'moon villages', so called because of their altitude and poor accessibility) and around the US army base of Yongsan (see Figure 5-2 on page 91). These settlements were so widespread that even the British architect John Turner, in his 1977 seminal book *Housing By People: Towards Autonomy in Building Environments*, presented Seoul as a paradigmatic case of a self-built city (Turner, 1977).

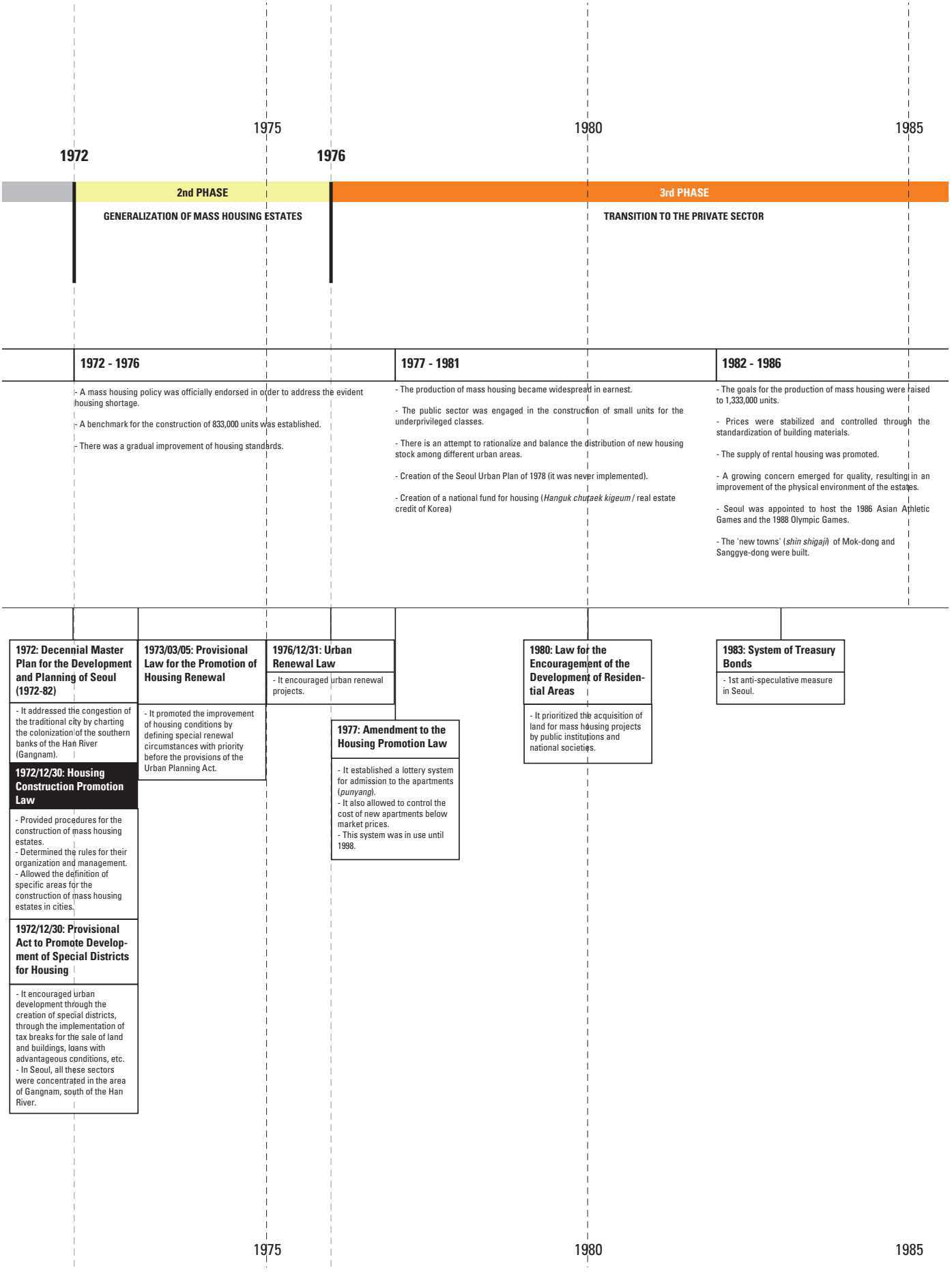
Informal settlements were the target of extensive urban restructuring campaigns in subsequent decades, alongside economic growth. Those campaigns triggered infamous forced evictions over the years, with residents given scant compensation, if any at all, and no rehousing arrangements. In 1966, Seoul Metropolitan Government launched the first 'clean-up' operation for the illegal settlements, with the aim of destroying

EVOLUTION OF THE MASS HOUSING POLICY (1 of 2)

5.10 ROLE OF THE STATE

Figure 5-8. Evolution of mass housing policies (I).

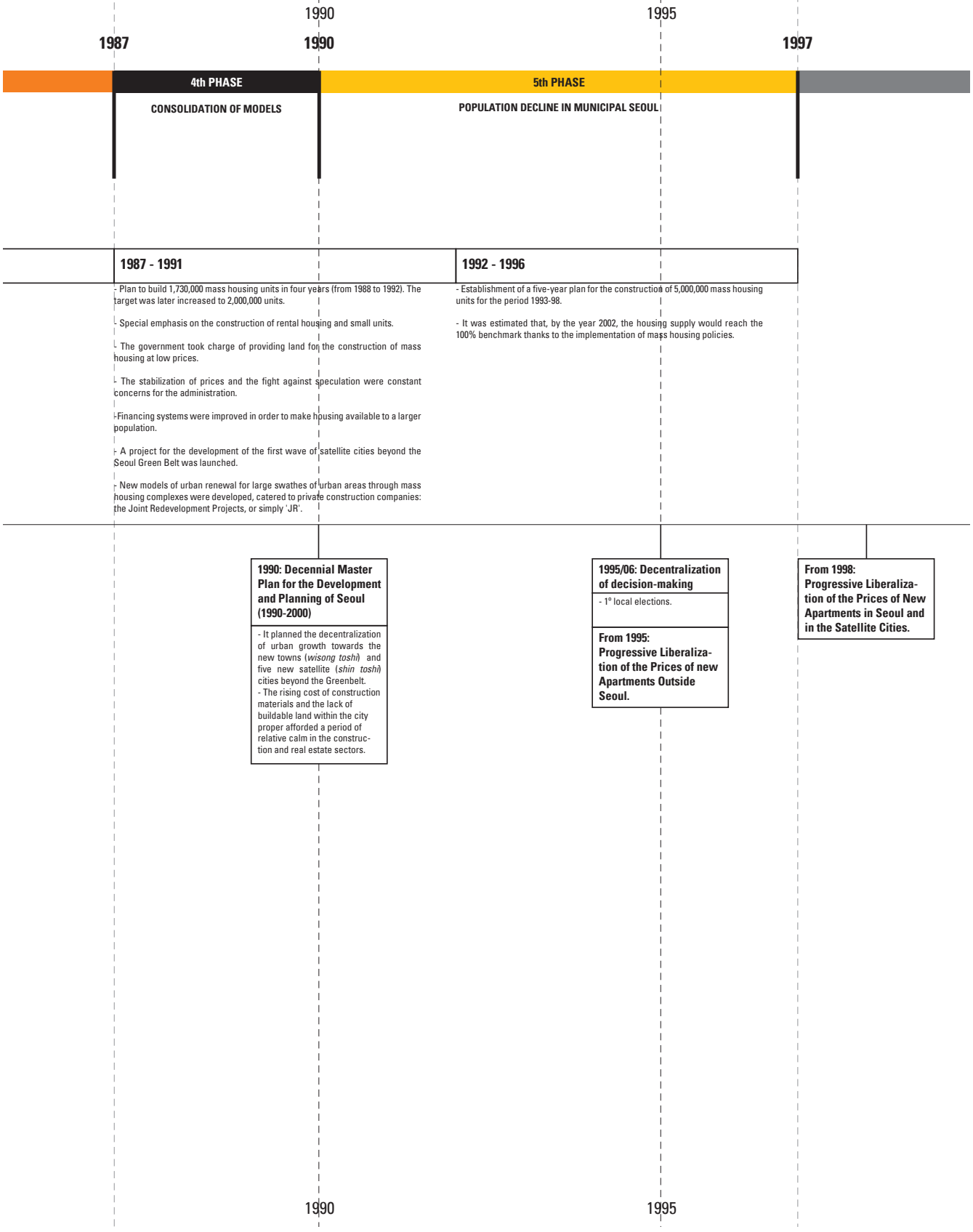


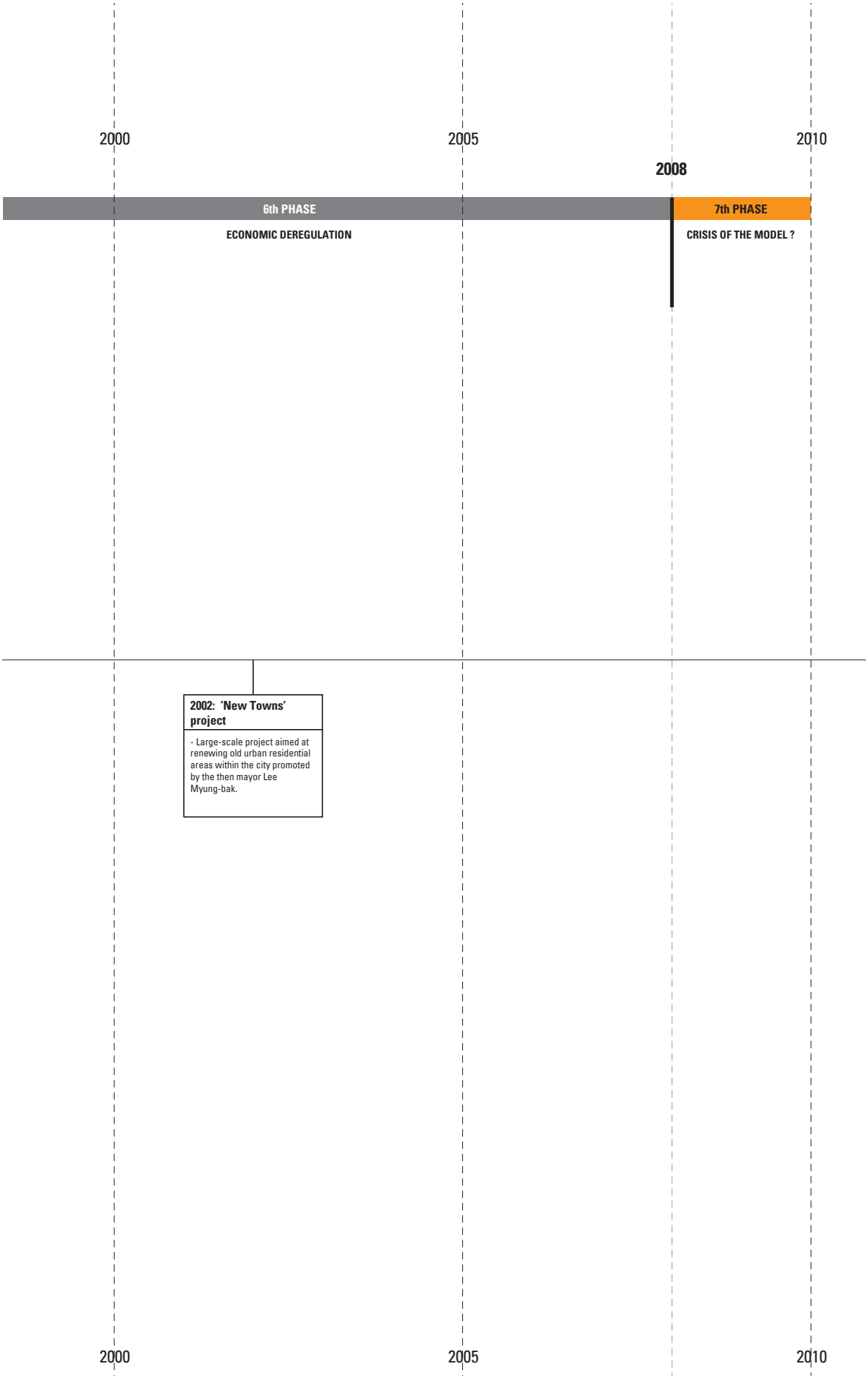

1975
1980
1985
1972
1976
2nd PHASE
GENERALIZATION OF MASS HOUSING ESTATES
3rd PHASE
TRANSITION TO THE PRIVATE SECTOR
1972 - 1976
- A mass housing policy was officially endorsed in order to address the evident housing shortage.
- A benchmark for the construction of 833,000 units was established.
- There was a gradual improvement of housing standards.
1977 - 1981
- The production of mass housing became widespread in earnest.
- The public sector was engaged in the construction of small units for the underprivileged classes.
- There is an attempt to rationalize and balance the distribution of new housing stock among different urban areas.
- Creation of the Seoul Urban Plan of 1978 (it was never implemented).
- Creation of a national fund for housing (*Hanguk chutaek kigeum* / real estate credit of Korea)
1982 - 1986
- The goals for the production of mass housing were raised to 1,333,000 units.
- Prices were stabilized and controlled through the standardization of building materials.
- The supply of rental housing was promoted.
- A growing concern emerged for quality, resulting in an improvement of the physical environment of the estates.
- Seoul was appointed to host the 1986 Asian Athletic Games and the 1988 Olympic Games.
- The 'new towns' (*shin shigaji*) of Mok-dong and Sanggye-dong were built.
1972: Decennial Master Plan for the Development and Planning of Seoul (1972-82)
- It addressed the congestion of the traditional city by charting the colonization of the southern banks of the Han River (Gangnam).
1972/12/30: Housing Construction Promotion Law
- Provided procedures for the construction of mass housing estates.
- Determined the rules for their organization and management.
- Allowed the definition of specific areas for the construction of mass housing estates in cities.
1972/12/30: Provisional Act to Promote Development of Special Districts for Housing
- It encouraged urban development through the creation of special districts, through the implementation of tax breaks for the sale of land and buildings, loans with advantageous conditions, etc.
- In Seoul, all these sectors were concentrated in the area of Gangnam, south of the Han River.
1973/03/05: Provisional Law for the Promotion of Housing Renewal
- It promoted the improvement of housing conditions by defining special renewal circumstances with priority before the provisions of the Urban Planning Act.
1976/12/31: Urban Renewal Law
- It encouraged urban renewal projects.
1977: Amendment to the Housing Promotion Law
- It established a lottery system for admission to the apartments (*punyang*).
- It also allowed to control the cost of new apartments below market prices.
- This system was in use until 1998.
1980: Law for the Encouragement of the Development of Residential Areas
- It prioritized the acquisition of land for mass housing projects by public institutions and national societies.
1983: System of Treasury Bonds
- 1st anti-speculative measure in Seoul.
1975
1980
1985

EVOLUTION OF THE MASS HOUSING POLICY (2 of 2)

5.10 ROLE OF THE STATE

Figure 5-9. Evolution of mass housing policies (II).




2000
2005
2010
2008
6th PHASE
ECONOMIC DEREGULATION
7th PHASE
CRISIS OF THE MODEL ?
2002: 'New Towns' project
- Large-scale project aimed at renewing old urban residential areas within the city promoted by the then mayor Lee Myung-bak.
2000
2005
2010

136,000 housing units, which were home to 230,000 families. By 1970, half of the homes had been demolished, but only 16,000 public homes had been made available for rehousing those affected (Asian Coalition for Housing Rights, 1989). Between 1985 and 1988, as the city prepared to host the 1986 Asian Games and the 1988 Summer Olympic Games, 700,000 people were expelled, often violently, in what became a systematic violation of the human rights of thousands of citizens, with the blessing of the authorities (Ha, 2002). Some settlements survived the urban renewal operations and have consolidated their position in the urban landscape. Since they were not planned, they still have a very visible organic structure, even today.

5.4.2 The Population as a Captive Customer Base

A captive customer base is a group of consumers with access to a limited range of goods. This type of market is common during times of industrial growth, in which there is a limited supply of goods and high demand, and is referred to as a monopoly market.

This strategy is typical of growing protectionist economies. Even today, Korea's economic system is based on a monopoly market that protects the national economy by restricting the domestic markets to a limited number of companies (those "designated" by the government, as we have seen) and hinders the penetration of imported goods through heavy tariffs. Consequently, there is a relative lack of competition in the market. For instance, Korean electronics and automobiles are more expensive in Korea than in other countries, where they must compete with the global market.

In the area of housing, the high demand discussed above, the shortage of developable land due to the geomorphological nature of the terrain and the need to seek cheap, fast solutions that can be industrialized caused the large-scale imposition of the apartment model by government to achieve the necessary housing density.

As already explained in the section of this chapter on the role of government, the state sought to change people's housing culture through extensive advertising campaigns and tax benefits. Although other types of homes still existed, apartments were, for all intents and purposes, the only real option for thousands of families.

5.4.3 The Emergence of a New Urban Middle Class

Perhaps the most significant social consequence of the economic-growth policy implemented by Park Chung-hee's regime following the 1961 coup was the gradual emergence of a new social class, known as the *shin chunggan kyegup* in Korean. This new middle class was formed by the skilled workforce at new companies, including administrators, public officials, managers and executive employees.

The growth of this vital workforce, which contributed to and benefited from economic growth, made it the dictatorship's main political ally. The top layer of this middle class, which was eventually called the *toshi chungsan ch'ung* or 'urban middle class', played a particularly prominent role. According to the Korea Development Institute (KDI), the criteria for being considered part of the urban middle class are:

- A monthly household income equal to or slightly above the mean.
- Secondary school qualifications.
- Belonging to the socio-professional classes of the middle classes.
- A sense of belonging to the middle class.

Following a survey conducted in 1991, the same institute concluded that 36% of Koreans belonged to this group (Gelezéau, 2003, pp. 19-22). Some experts use the term more narrowly, excluding manual workers, who rank low on Korea's social ladder. This urban middle class is closer to the ruling classes than to the middle class, and has become a benchmark for the whole of society.

The new type of apartment introduced in the 1970s was not very popular among this emerging social class, who associated the apartments with the rehousing of people living in informal settlements. Slowly but surely, however, they warmed to the new homes thanks to the government marketing strategies described above. The strategy of facilitating access to homeownership targeted this group in particular. Buying one of these apartments through the complex system of lotteries became a means to join this social rank and a symbol of belonging to this elite group, so much so that in the 1980s and 1990s, the number of smaller apartments being built declined.

Mass housing estates in Seoul were not related to social housing anymore, and the underprivileged classes were excluded from housing policy during the years of economic growth (Gelezéau, 2003, p. 49). This strengthened the connection between economic development, modernization, urban middle class, apartments and social model. Quoting Lee Eun, Gelezéau has explained how families who obtained an apartment through the housing lottery system were able to join the middle class, becoming beneficiaries of the regime. Thus, Korean mass housing estates could be considered 'genuine factories of the middle class' (Lee, 1997, pp. 118 and 196. Quoted in Gelezéau, 2003, p. 47).

5.4.4 Speculation and Gentrification

Various factors caused intense speculation: the increasing popularity of the apartment complexes among the new middle class, the increase in the number of apartments being built by the private sector, government strategies to provide access to homeownership, and the fact that, despite everything, there was still an enormous housing shortage.

Professional speculators and families with savings saw the opportunity to cash in on the difference between the prices set by the government and the market prices set by demand. In the 1980s, and especially the 1990s, it became common practice among the middle class to move from one apartment to another to profit from price increases. Some have labeled the people of Seoul 'urban refugees': the higher social classes move house to maximize their profits from the resale of their home, and lower-income households avoid the land price rises brought about by gentrification (Park, 2010, pp. 23-41).

Intense demand also reduced the quality of buildings, with land speculation and price limits squeezing the construction firms' margins. Nevertheless, homes continued to be sold, and the state had very little control over their construction (Sohn, 2003, p. 268). This situation led to the 1983 anti-speculation laws prohibiting those selected in a housing lottery from taking part in another lottery if they had taken out another savings plan.

5.4.5 Apartments as Status Symbols

Although lifestyle, place of residence and house type are markers of social status in most modern industrialized societies, it is unique to South Korea that standardized apartments in high-density complexes have social prestige (Gelezéau, 2003, p. 29). That is why the popularization of this type of home took place from the top down.

As already explained, the prestige associated with the apartments was the result of a deliberate social engineering scheme by the authorities to change the negative connotations associated with the apartments. In the early 1970s, they were associated with the poorer classes, who were moved there so that self-build neighborhoods could be knocked down; thanks to social engineering, however, they came to be associated with the new, modern urban elite.

Nevertheless, Denise P. Lett argued that the status acquired by the apartments was as much about Korean sociocultural practices, especially in terms of how people claim social status, as it was about state authoritarianism, planned economic policies and access to homeownership (Lett, 1998).

5.5 GROUPS EXCLUDED FROM THE SOCIAL CONTRACT: LOW-INCOME HOUSEHOLDS

The developmental regime unleashed a spectacular economic performance, which brought in significant physical improvements to disadvantaged neighborhoods. Nevertheless, the poor living in those areas were largely alienated from such improvements and endured serious housing problems.

The combination of a series of factors (the intensity of economic growth, the concentration of that growth in the capital and the shortage of developable land) during the 'economic miracle' initiated by President Park Chung-hee's dictatorship in 1961 only worsened the chronic housing shortage present in Seoul since Japanese colonial times. Informal settlements continued to alleviate the urgent need for housing of low-income households during the first years of the developmental period. It is estimated that up to 30% of the citizens of Seoul lived in inner city squatter settlements during the 1960s and 1970s[19] (S.-h. Kim, 2014), when the population increased by about half a million every two years (Kyung, 2011). At the time, the government focused on industrial growth over social development, and spending on housing was not perceived as a priority until the mid-1980s (Kyung, 2011). The state's approach towards slums was a combination of *laissez faire* attitude together with urban beautification experiments involving the clearance of squatter settlements in limited areas of the consolidated city. The Urban Planning Act of 1965 introduced two types of urban redevelopment districts: the removal of informal areas in downtown to build high-end shopping arcades and mixed-use condominiums, and the forced relocation of squatters on the hills surrounding the city center into humble collective housing projects called 'citizen's apartments'[20]. Despite the limited success of these squatter clearance programs due to the shortage of public funding, they became a precedent of the state-led gentrification of poor neighborhoods through mass housing (Kyung, 2011).

The gradual shift to private development during the 1980s brought raises in land prices in poor housing areas near the city center. This escalated with the establishment of the joint redevelopment projects (JR) in 1983[21]. The original purpose of the program was to improve the living conditions of low-income families in degrading residential neighborhoods through voluntary contracts between property owners, residents and developers within areas designated by the administration. The program improved vastly the quantity and quantity of housing in the city. It is estimated that 124,343 dwellings were demolished and about twice as much were built between 1973 and 2008 (Kyung, 2011). Nevertheless, the JR program did not take into consideration the needs and rights of the original tenants, who were forcibly evicted in the course of the redevelopment and lost access to affordable rental housing. It is estimated that only 40% of owners and 10% of tenants returned to redeveloped areas after a large-scale urban renewal project had taken place due to the increase in housing values (Kyung, 2011). The JR program became a process of gentrification led by the policies of the administration, and effectively managed to displace working class families, substituting them with middle-class households. In the process, most of the squatter settlements of Seoul were removed.

Because of the sheer scale and brutality of the forced evictions related to the JR program, South Korea was branded the country where the most inhumane forced evictions occurred together with South Africa at the General Assembly of Habitat International Coalition in 1987 (Asian Coalition for Housing Rights [ACHR], 1991). The process escalated in preparation for the 1988 Summer Olympic Games. The need to provide land for the sports facilities, accommodation and other tourist facilities led to ambitious redevelopment programs. These included the beautification of slums and other unsightly areas visible from main roads,

19 See Figure 5-2 on page 91.

20 See '3.6 Citizen's Apartments Project, 1969' in Chapter 3, Volume 02.

21 See '8. Mass Housing as a Tool for Inner City Renewal' in subchapter '7.2 Roles of Mass Housing in the Different Plans for Seoul', Chapter 7, Volume 01.

hotels and olympic facilities in order to enhance the international image of the country (Asian Coalition for Housing Rights [ACHR], 1989). It has been estimated that only between 1983 and 1990, 720,000 people were evicted as a result of such urban renewal projects (Habitat International Coalition & UNCHS, 1996b, p. 246), which in return also provided capital to finance the construction of the Olympic facilities (Asian Coalition for Housing Rights [ACHR], 1989).

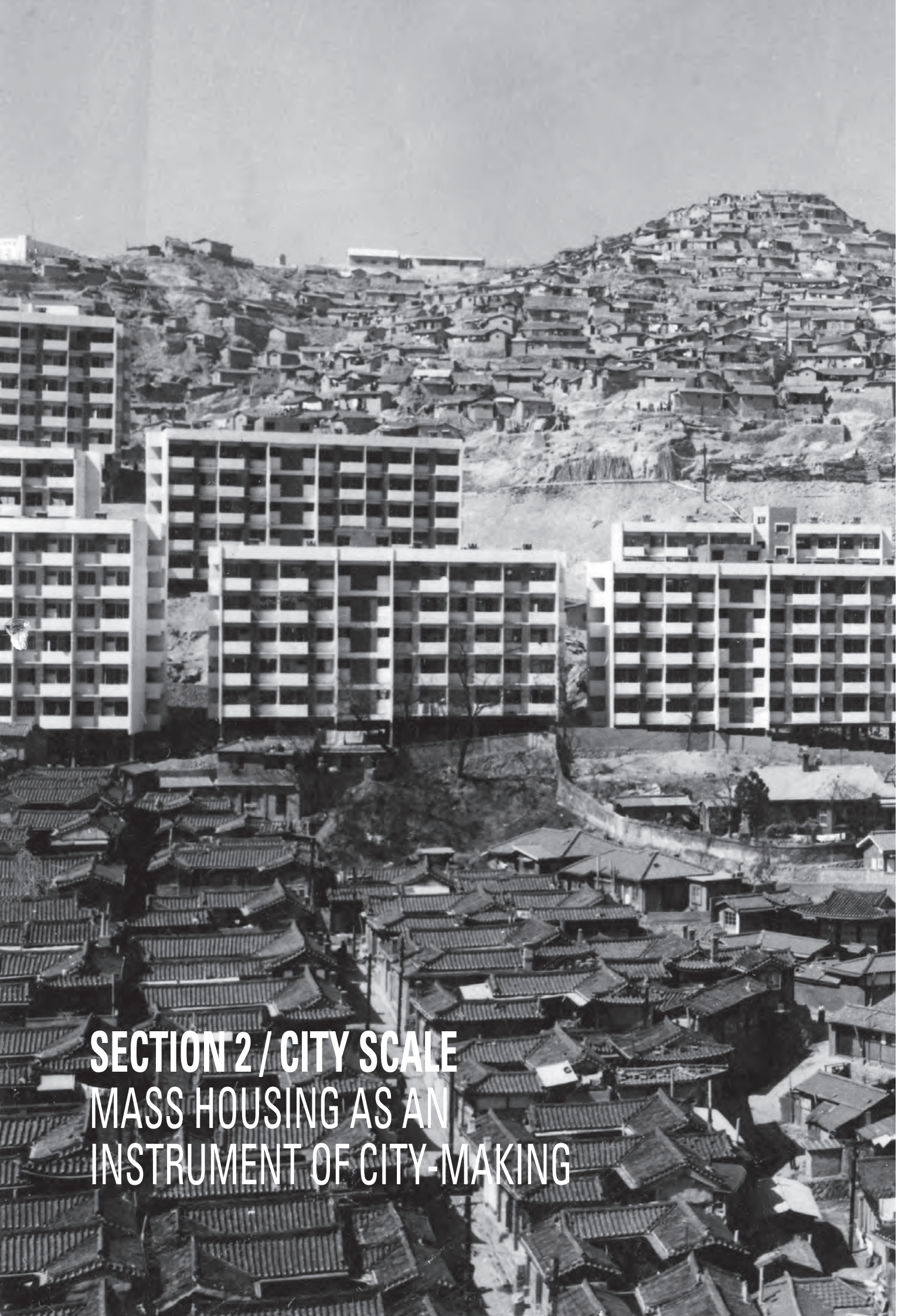
The social unrest related to the lack of affordable housing as a consequence of the raise in housing prices and the eradication of squatter settlements after the Olympic Games prompted the government to finally adopt social housing policies similar to those of Western welfare systems in 1989. The Two Million Housing Construction Plan initiated by the government in 1989 and the 1997 Asian Economic Crisis challenged the continuity of the joint redevelopment program (JR).

After the crisis, the growth-focused government of Lee-myung Park embraced urban gentrification as a means to reactivate the economy. It launched the New Town program[22], a much more aggressive housing redevelopment and urban renewal program. It encouraged comprehensive development within large-scale master plans by deregulating the planning law and the building code and softening the requirements for the designation of project areas in order to attract private investment (Kyung, 2011). Between 2002 and 2008, 26 areas were designated to be redeveloped in Seoul, covering 23.8 km2 and affecting 850,000 residents[23]. The returning rate of original residents has been even lower than in the JR program, and the number of affordable units has also been reduced. In an attempt to address these events, the supply of social housing continued to increase since 1989 in different forms, reaching the 5% of all households by 2012[24] (Kim, 2014, p. 97).

The role of the South-Korean government in promoting affordable housing during the developmental period was very different from Western welfare systems and even from other East-Asian developmental estates such as Singapore and Hong Kong. Not only was mass housing adopted later but also it was not part of social policies geared towards redistributing wealth. After a failed attempt to provide affordable housing for evicted slum dwellers in the 1960s, housing policy shifted to favor middle class households instead.

This perpetuated the shelter problems of the urban poor and advanced what would happen elsewhere with the decay of the welfare state and the neoliberal turn since the 1980s, when the gradual development of neoliberal markets made inequality in housing opportunities a new normal. As Peter Marcuse and David Madden have pointed out, *'housing crisis is not a result of the system breaking down but of the system working as intended'*, since *'housing is not produced and distributed for the purposes of dwelling for all; it is produced and distributed as a commodity to enrich the few'* (Madden & Marcuse, 2016, p. 10), in a system where housing and urban development are not just side-effects but rather *'some of the main processes driving global capitalism'* (Madden & Marcuse, 2016, p. 8).

22 See '3.16 New Town Initiative, 2002' in Chapter 3, Volume 02.
23 Ibid.
24 See 'D.1 Privatization in City Making' in subchapter 25.2, Chapter 25, Volume 01.



SECTION 2 / CITY SCALE
MASS HOUSING AS AN INSTRUMENT OF CITY-MAKING

Figure C-1. 'Kunwha District Low-rise apartment construction'(1969)
Photographer unknown. Image rights property of Kyunghyang newspaper.Photograph taken on 1969, April 1.

"Construction is my religion." (**건설은 나의 종교이다**)

Mayor Kim Hyon-ok (**김현옥**)

"Since Mayor Ok was elected until the death of (President) Park, an average of 9,000 people moved into the city daily. My concern was how to let all this people make a living without rotting.... There was no time for lofty ideas. No far-reaching plans."

Sohn Jung-mok, urbanist, responsible for the planning of Yeongdong and Jamsil. Interviewed in: **정재은** (Jeong, Jae-eun, Director). (2017). **아파트 생태계** ('Ecology in Concrete')

"The goal of the avant-garde manifesto was never to revolutionize architecture one building at a time, but to catalyze sweeping changes at the urban scale, reordering the entire structure of modern life. Yet when the market economy took hold at the end of the 1970s, architects stopped writing manifestos. We stopped thinking about the city at the exact moment that urbanism exploded in the developing world."

Rem Koolhaas, 'The Smart Landscape: Intelligent Architecture'. *Artforum*, April 2015.

"Seoul's public appearance is the by-product of the paradoxical combination of 'too much planning' and 'too little planning'."

Kang Hong-bin (2005) In: Kim Sung-hong (Ed.), *The Paradox of Public Space in the Asian Metropolis.*

"We still conceive the city through separated and overlapping systems, or through isolated and segregating functions. We insist in seeing in it a mechanicist construction based on the living cell, from which the aggregation of housing units develops, and the provision of facilities as an extension of those units. Finally, the city center as the end piece of the whole structure. The history of cities and the most recent studies demonstrate that the mere accumulation of housing, even to the scale of hundreds of thousands, is not enough to create a city."

Bernard Huet (2013) 'La ciudad como espacio habitable: Una alternativa a la Carta de Atenas' (*The City as an Inhabitable Space: An Alternative to the Athens Charter*). *QRU3 Urbanism Research Journal* (Vol. #3: Transformations. Urban Patterns, pp. 138): Departament d'urbanisme i ordenació del territori (DUOT) UPC (Barcelona Tech). Generalitat de Catalunya.

SECTION 2 / CITY SCALE
MASS HOUSING AS AN INSTRUMENT OF CITY-MAKING

The photograph in the preceding spread, taken in the northern hills of Seoul at the end of the 1960s, bears witness to three different stages in the evolution of housing in the capital during the twentieth century. On the plain in the foreground one can observe a mixture of residential fabrics resulting from the urban expansion during the Japanese colonial period (1910-1945). On the left side, the regular layouts of courtyard houses with dark roof tiles were adaptations of the traditional Korean house (*hanok*) catered to fit in urban subdivisions. To the right side, detached houses with sloping roofs of Japanese influence can be identified. The hills in the background are covered by informal settlements. They sprung mostly after 1945 with the return of refugees from World War II and later from the Korean War, lured by the concentration of economic opportunity in the capital. These settlements were called 달동네 (*'moon villages'*), due to their elevated location and difficult access. The apartment buildings being built on the hillside in between the two previous urban morphologies were the product of social housing policies designed to resettle squatters. They were called 'Citizen's Apartments' (시민 아파트) and at this point they were not developed as estates (*tanji*), but as standalone apartment buildings.

Within the period of this study (1962 – 2008), mass housing emerged as the preferred residential choice of Seoul's population. More than 1.5 million apartment units were built[1], and today more than 50% of the residents of the capital live in mass housing estates[2]. Mass housing was the built form that single-handedly produced the biggest impact in the physical transformation of Seoul from a proto-industrial city to a metropolis and shaped its modern identity.

Was the implementation of mass housing over the period of study seen as an integral part of a larger urban vision? This section will look at the territorial - structural arrangement of Seoul's apartment complexes. The goal is to understand whether the need to provide housing at an unprecedented scale and rate was seen as a creative opportunity to propose a new urban model specifically catered to the local conditions of fast economic growth, high density, limited land and resources, etc. from a qualitative point of view. Or rather, whether housing was understood merely as a quantitative issue limited to the provision of housing units. In other words, do apartment complexes function urbanistically as more than isolated fragments?

As described by Manuel de Solà-Morales, the 'urban project' refers to the process of organizing the distribution of land, the layout of infrastructure and public space, and the construction of buildings over time. These three separate operations are not necessarily simultaneous nor do they always follow the same sequence in time. Thus, the multiple possible combinations generate the rich morphological variety that characterizes different cities (de Solà-Morales, 1997, p. 19). For instance, in a process of urban extension, the first step is typically the division of the land in parcels,

1 See Figure 4-6 in Chapter 4, Volume 01.

2 Source: Seoul Center for Housing Policy Development, Seoul Metropolitan Government, 2013 (서울특별시 주택정책개발센터장).

followed by the layout of streets and infrastructure, and finally the gradual infill of those parcels by buildings according to established regulations. However, in an informal settlement, buildings typically emerge without any process of lot development, layout of streets or provision of infrastructure. These may or may not come later if there is a process of regularization of the settlement. In Seoul, with the advent of mass housing, a transition took place from the gradual construction of the city through piece-meal interventions over time to the holistic construction of entire urban fragments at once. The lotification of the land, the provision of open space and infrastructure, and the construction of buildings became simultaneous and inseparable acts that compressed the time dimension of city-making (de Solà-Morales, 1997, p. 22).

Thus, this transition from building the city one house at a time to its construction 'by blocks' is a key feature in order to understand the modern city. The change of scale from piece-meal urban growth to the planning of entire residential sectors introduced two important innovations. One, mass housing became a policy tool to manage urban expansion in terms of the decisions about the location, size, and coordination among the different sectors and the existing city. The other, each sector became a self-contained design unit of that urban growth (Ferrer, 1996, pp. 18, 21).

SECTION 3 STRUCTURE: FOUR CHAPTERS

Chapter 6 proposes a division of the period of study in different phases by taking into consideration political and economic factors, but also the evolution of the housing shortage, the percentage of production of mass housing from the total, the changing weight of the private sector in this production, and others. The phases are established graphically by way of a timeline.

Based on those phases, Chapter 7 addresses the central question of the Section by describing the different roles mass housing had during the period of study. This is achieved by contrasting the role of mass housing in the different plans for Seoul during the period of study versus what was actually built. The groundwork for this comparison is developed in two separate researches included in Volume 02. One looks at the role mass housing had in urban visions of the period as expressed in different plans; and the other maps the actual construction of mass housing in the different phases, in relationship to the evolution of urban infrastructure. The chapter shows how mass housing was adopted with different urban goals in different periods, responding to changing demands and mostly from a quantitative and problem-solving approach. From this study, an important finding emerges: the practical expertise accumulated through the trial-and-error adaptation of models, strategies and practices from abroad incrementally congealed into a system.

Chapter 8 describes mass housing in Seoul as a standardized technology for city making assembled with methods, experiences and forms from the toolbox of modern architecture and urbanism.

Chapter 9 elaborates on the main findings of the section, focusing on three aspects: the contribution of South Korean mass housing to the diffusion of modern urban concepts, the construction of apartment complexes as isolated packages of housing rather than cohesive parts of the city, and the adoption of mass housing as a standardized technology for city making.

Chapters 1 to 6 in Volume 02 support this Section.

CHAPTER 6
PHASES IN THE EVOLUTION OF MASS HOUSING IN SEOUL: A TIMELINE

The evolution of mass housing in Seoul during the second half of the twentieth century is typically explained by decades: the sixties, the seventies, the eighties, etc. This research proposes a more rigorous definition of phases based on political facts, economic development, demographic growth, changes in legislation, evolution of the housing shortage, production of mass housing, and type of development -public or private.

A timeline is proposed as a basic methodology. Its graphic character allows for the consolidation of a large amount of information in a compact and operative way, as well as to establish relationships among the different sets of data. The timeline shown below is a synthesis from the ones featured in Chapter 4 of Volume 02 addressing the different themes. Phases are defined by overlapping critical moments across the different categories.

According to the timeline, four broad phases in the evolution of mass housing in Seoul for the period of study can be established:

- 1st Phase: 1962 – 1972
- 2nd Phase: 1972 – 1986
- 3rd Phase: 1986 – 1997
- 4th Phase: 1997 – 2008

Within those, the 2nd and 3rd Phases are each divided into two sub-phases to account for specificities during the interval. Each phase and subphase are described below:

SUMMARY: ESTABLISHMENT OF PHASES

DEFINITION OF PHASES:

- **1962 - 1972:** Coinciding with the first two 5-year economic plans. Although housing was not one of the top priorities of the new regime, it did experiment with mass housing, either as a solution to informal settlements, or as a modern lifestlyle for the affluent classes.
- **1972 - 1986:** The third 5-year economic plan, in parallel with changes in the developmental regime, intensified the focus on urban planning and housing. Mass housing became widespread and there was a shift towards private development. This phase is divided in two sub-phases around the year 1976, when the Urban Planning Act further facilitated the provision of mass housing and the turn towards private development. The period ended with the conclusion of the national project to build 5,000,000 mass housing units.
- **1986 - 1997:** With the preponderance of private development, mass housing models were consolidated. Apartment complexes were instrumental in the jump of scale towards the metropolitan area, and the economic crisis of 1997 signified the end of the 5-year economic plans and a progressive liberalization of prices. The year 1990 defines two sub-phases, due to the importance of the emergence of the satellite cities.
- **1997 - 2008:** Period of maturity in between the two economic crises characterized by deregulation, the progressive depletion of new land to colonize through apartment complexes, and the progressive shift towards inner city urban renewal through mass housing.

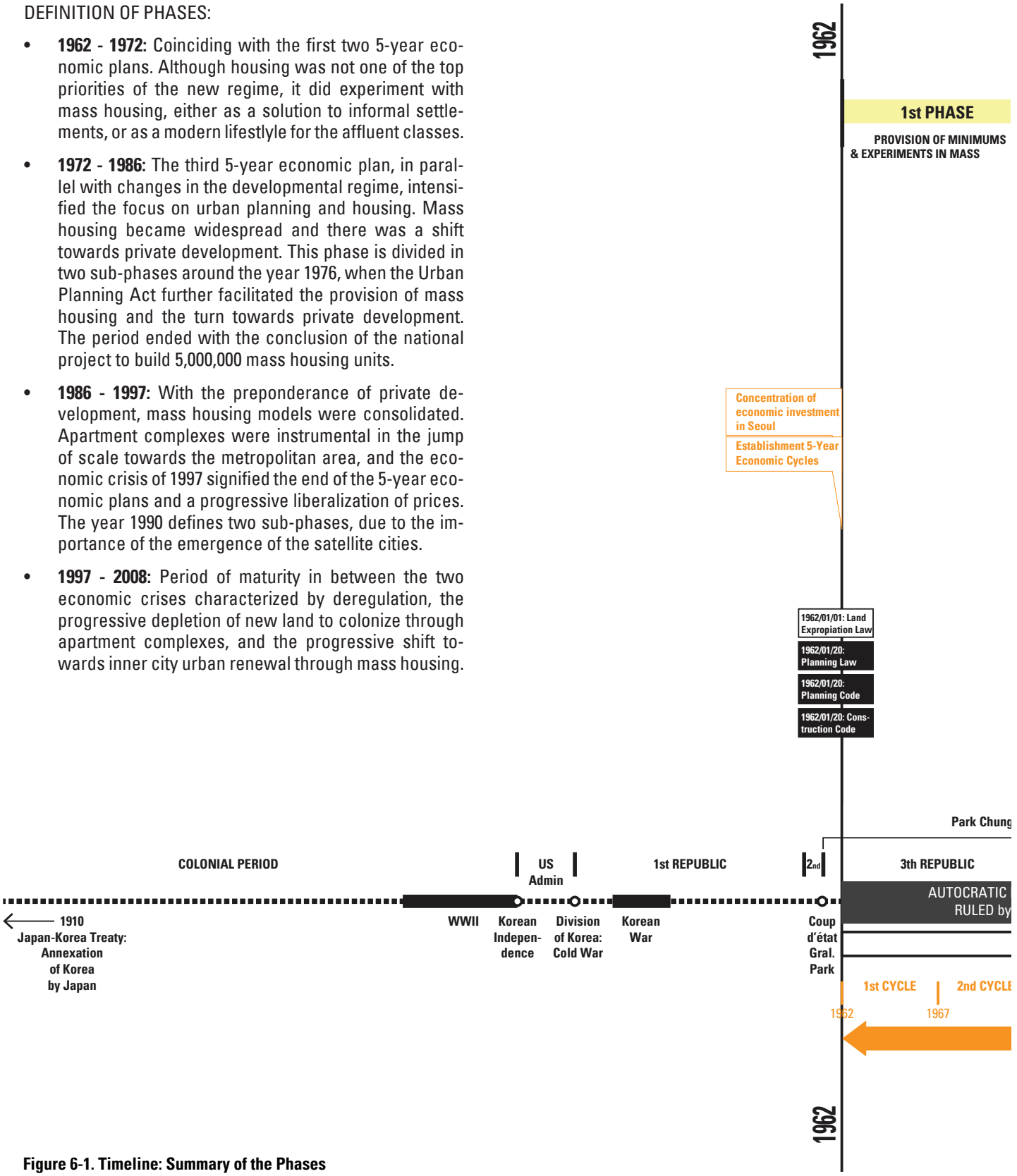
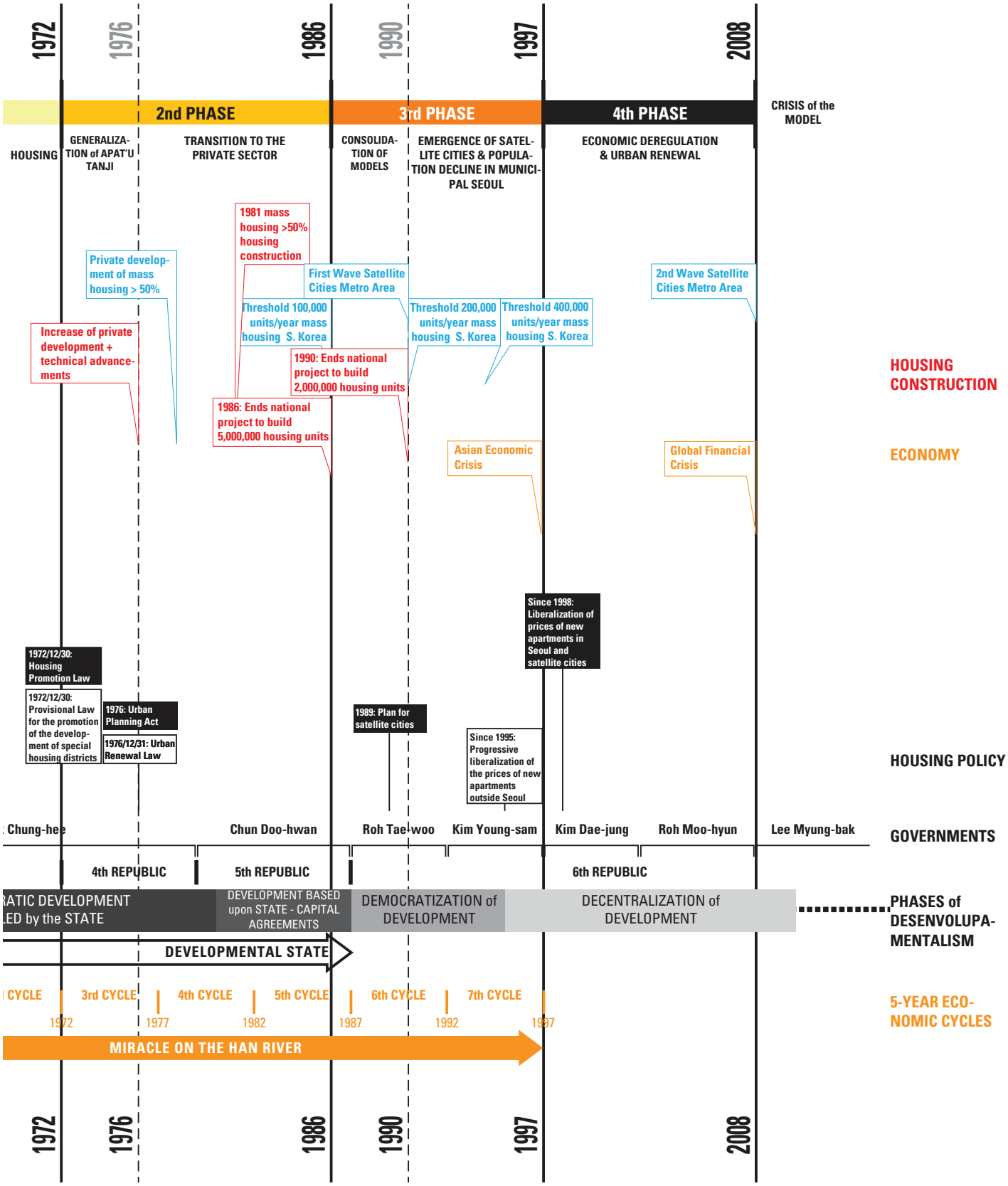


Figure 6-1. Timeline: Summary of the Phases


1972
1976
1986
1990
1997
2008
2nd PHASE
3rd PHASE
4th PHASE
CRISIS of the MODEL
HOUSING
GENERALIZATION of APAT'U TANJI
TRANSITION TO THE PRIVATE SECTOR
CONSOLIDATION OF MODELS
EMERGENCE OF SATELLITE CITIES & POPULATION DECLINE IN MUNICIPAL SEOUL
ECONOMIC DEREGULATION & URBAN RENEWAL
1981 mass housing >50% housing construction
Private development of mass housing > 50%
First Wave Satellite Cities Metro Area
2nd Wave Satellite Cities Metro Area
Threshold 100,000 units/year mass housing S. Korea
Threshold 200,000 units/year mass housing S. Korea
Threshold 400,000 units/year mass housing S. Korea
Increase of private development + technical advancements
1990: Ends national project to build 2,000,000 housing units
1986: Ends national project to build 5,000,000 housing units
HOUSING CONSTRUCTION
Asian Economic Crisis
Global Financial Crisis
ECONOMY
Since 1998: Liberalization of prices of new apartments in Seoul and satellite cities
1972/12/30: Housing Promotion Law
1972/12/30: Provisional Law for the promotion of the development of special housing districts
1976: Urban Planning Act
1976/12/31: Urban Renewal Law
1989: Plan for satellite cities
Since 1995: Progressive liberalization of the prices of new apartments outside Seoul
HOUSING POLICY
Chung-hee
Chun Doo-hwan
Roh Tae-woo
Kim Young-sam
Kim Dae-jung
Roh Moo-hyun
Lee Myung-bak
GOVERNMENTS
4th REPUBLIC
5th REPUBLIC
6th REPUBLIC
RATIC DEVELOPMENT LED by the STATE
DEVELOPMENT BASED upon STATE - CAPITAL AGREEMENTS
DEMOCRATIZATION of DEVELOPMENT
DECENTRALIZATION of DEVELOPMENT
PHASES of DESENVOLUPAMENTALISM
DEVELOPMENTAL STATE
CYCLE
3rd CYCLE
4th CYCLE
5th CYCLE
6th CYCLE
7th CYCLE
1972
1977
1982
1987
1992
1997
MIRACLE ON THE HAN RIVER
5-YEAR ECONOMIC CYCLES

6.1 1st PHASE, 1962 – 1972: PROVISION OF MINIMUMS

Corresponding to the first two quinquennial economic cycles of the new regime, the Third Republic, up until the approval of the Housing Promotion Law of 1972, an important stepping stone which lead to a different phase. The main undertakings were:

- Foundation of the KNHC, *'Daehan Jutaek-gongsa'* (Korean National Housing Corporation).
- Approval of the Urban Planning Law, 1962.
- Approval of the Building Code, 1962.
- Approval of the Land Expropriation Act, 1962.
- Approval of the Regional Planning Law, 1962.
- Approval of the Decree on Public Housing, financed by the National Housing Fund, depending on the area of apartment units.
- Approval of the Land Reorganization Act, 1966.
- Approval of the Seoul Urban Master Plan, 1966.
- Creation of the Housing Bank *'Chut'aek Unhaeng'*, in order to manage housing subsidies for units under 60m² (Gelezéau, 2003, p. 172).

(See Figure 5-8 and Figure 5-9 in Chapter 5, Volume 1 for a timeline of the main policies implemented in terms of mass housing during the period of study).

Together with the economic policies of the Third Republic, new measures were implemented in order to address the chronic housing shortage that loomed over Seoul since the time of the Japanese colonization[1]. Since private construction companies alone were not capable of responding to the demand, the public sector assumed the responsibility. To that end, a series of new laws were passed in order to strategically concentrate public investment and to facilitate the execution of housing (see above). The target of the housing policy behind those new laws was the construction of apartments and single homes for the middle class with public funds. The government would subsidize 50% of the cost, and the rest would have to be covered by apartment owners (Yun, 2003, p. 255). The newly created Korean National Housing Corporation built in 1962 the first *apat'u tanji* in Mapo, showcasing the new housing policies of the new regime and the path to modernization that it wanted to enforce[2].

At the outset of the second economic cycle in 1967, the government changed its initial housing policy, and announced its commitment to address the many informal settlements surrounding the city. Not only they were an eye sore, but they also hindered urban and economic development, and were seen as a possible source of political conflict in the context of Cold War anti-communist paranoia ensuing the Korean War. The slogan *'one house per household'* encapsulated those different purposes under a propagandistic, politically correct format.

To that end, three measures were adopted:

- Redevelopment of slum areas through small apartments where squatters and low income families could be resettled.
- Regularization and legalization of informal buildings through local improvements.
- Resettlement of settlers forcibly evicted from the shantytowns in Seoul into a large scale housing project in Gwangju (Gyeonggi-do, today), an area south of the capital within the metropolitan area (known as the Gwangju Grand Housing Complex).

Overall, these measures implied a significant shift in housing policy: the public capital that in the first five-year economic plan had been allocated for the construction of mass housing for the middle class would be used, instead, to finance the relocation of squatters into public apartments. This was in line with similar policies in other East-Asian developmental regimes in similar stages of urbanization, economic development and demographic growth such as Singapore and Hong Kong, or as

1 See Figure 4-3 and Figure 4-4 in Chapter 4, Volume 1.

2 See Case Study #01 in Chapter 7, Volume 02.

it had happened in post-World War Japan earlier. It also relates to similar situations in 1920s Europe, such as the cases of The Netherlands and Germany. A new typology of buildings with small units (between 28 and 33 m^2) was designed, the so-called *'citizen's apartments'* (시민 아파트). The housing subsidy system was changed in order to cater to the economic possibilities of the target residents: the central government would take care of 40% of the cost, the local government would subsidize another 40%, and the residents were responsible for the remaining 10%, to be paid after moving in over five, ten or fifteen year periods.

In 1968, Mayor Kim Hyeon-ok (also known as 'Bulldozer Kim') announced a plan to build 2,000 citizen's apartment buildings within a three-year period (from 1969 to 1971), with the intention to clear 780,000 *pyeong* (about 23 Ha.) of land in forty slum areas, in order to build 90,000 housing units (Yun, 2003, p. 256). The plan was proven too optimistic, given the extremely limited financial resources of local governments. In spite of the economic uncertainties, the construction of citizen's apartments was undertaken on many of the hillsides surrounding downtown. All kinds of cost-saving strategies were adopted, such as using of low-quality materials, or bypassing geotechnical studies, among others. The ensuing low quality of the building brought all kinds of social malaises, until the fatal collapse of building #15 in the Wau Apartments in April 1970, due to insufficient use of steel beams just four months after completion. There were twenty-three fatal casualties and thirty-nine wounded. As a consequence, Mayor Kim Hyeon-ok resigned and the police investigated 697 similar buildings nation-wide, concluding that eighty-five of them were poorly built and did not comply with safety regulations (Yun, 2003, p. 298). At the time, 426 buildings including 16,962 units or 21% of the original citizen's apartment plan had been built in Seoul (Yun, 2003, p. 257).

The disaster renewed initial negative sentiments about mass housing and brought about a radical change in the housing policy of the regime. As author Im Dong-guk has pointed out, the separation of mass housing from the poor in South Korea at the beginning of the 1970s was due to the collapse of the Wau apartments in the first place, and to the Gwangju Grand Housing Complex riots of the following year, highlighting the role that the narratives of disaster and political protest have had in the modern history of the country (Dong-guk Im, 1999).

From then on, housing policies were reoriented towards facilitating the construction of housing for the emerging urban middle class without public expenditure, following a very different path from other South-East Asian developmental regimes in similar stages of urbanization, economic development and demographic growth. As a reference, it is striking to note that the public housing policies of Singapore and Hong Kong have reached an 85% and a 70% of their respective housing markets (Rowe, 2005, p. 70 & 74).

6.2 2nd PHASE A 1972 – 1976: GENERALIZATION OF APAT'U TANJI

The second phase began with the approval of the Housing Promotion Law of 1972 and encompassed the third quinquennial economic cycle up until 1977 when, for the first time, private construction companies overtook the public administration in the construction of apartment complexes. The main measures during the period were:

- Approval of the Housing Promotion Law, 1972. This legislation was fundamental in the widespread generalization of apartment complexes in Seoul. It incentivized the construction of mass housing, specifically in the form of apartment complexes, by establishing norms and procedures. It facilitated the acquisition and development of land for collective housing, and regulated the intervention of the private sector. The Law was later modified during the 1980s and it is still enforced nowadays.
- Relocation of the most prestigious schools from the historical city to the newly developed south bank of the river (Gangnam), in order to attract population (S.-K. Sohn, 2003, p. 270).
- Definition of areas to be developed specifically through apat'u tanji, 1972.
- Prohibition of any type of urban growth in the northern side of the city, in order to benefit the development of the south (S.-K. Sohn, 2003, p. 270).
- Approval of the Urban Renewal Law, 1976.

The Law of 1972 was tailor-made to promote the construction of *apat'u tanji.* It was geared towards the densification of housing quarters, promoting specifically the construction of mass housing. It also promoted for the first time the definition of sectors dedicated to the construction of apartment complexes, where height regulations were lifted and floor area ratio (FAR) was increased up to 3 (Yun, 2003, p. 142).

The Housing Promotion Law also determined the roles public and private sectors would have from then on. At a moment when apartments had already been popularized and construction companies were beginning to develop a specific expertise, the administration shifted its role from being an active developer to facilitating and managing the process.

Thresholds for the construction of apartment complexes were established, in correspondence with the quinquennial economic cycles established by the Ministry of Construction and Transportation: 800,000 units were to be build during the 3rd cycle (1972 - 1977); 1,200,000 during the 4th (1976 - 1981), and 5,000,000 during the fifteen following years (1981 - 1995). Since 1990, the goal was established at around 500,000 units of mass housing per year. Even though these ambitious goals were never achieved, they had a long-lasting influence in directing the evolution of construction systems towards mass production.

It was during this period that the city finally grew beyond the boundary of the Han River. The extension of the city towards the southern bank (Gangnam) was embraced as a modern alternative to the overcrowding and unhealthiness of the traditional city. To that end, urban paradigms of the modern movement were eagerly adopted. Orthogonal grids of wide avenues were created through ambitious parcel restructuring projects. These avenues defined urban mega-blocks up to 500m. by 800m., which in turn became the basic modules for the implementation of *apat'u tanji*. The layout of the road infrastructure came together with the planning of the subway network and the hydrological works that would protect the new developments from the yearly floods.

Only after the necessary financial and infrastructural measures were set in place could the first large scale complexes be initiated, such as the Tongbu Apartments in Icheon-dong (north bank of the river), and the *tanji* of Banpo (1972-74) and Jamsil (1975-84) on the southern bank.

6.3 2nd PHASE B 1976 – 1986: TRANSITION TO THE PRIVATE SECTOR

In 1977, the Housing Promotion Law of 1972 underwent a modification in order to allow the government to control the price of new housing below market value. The measure generated a huge demand, and was accompanied by the implementation of a series of measures:

- Modification of the Housing Promotion Law, 1977. A system for the attribution of new housing is implemented, based on a public lottery. The government begins to control the price of new housing below market value.
- Approval of the Seoul Urban Master Plan, 1978. It would never be implemented.
- Creation of the land development agency, 1978.
- Approval of the Law for the Promotion of Development of Housing Land, 1980.
- Creation of the National Fund for housing, 1981.
- Implementation of the first anti-speculation measures through a system of treasury bonds, 1983.
- Modification of the Urban Renewal Law in order to allow private developers to engage in urban renewal projects.
- Planning of the new towns of Mok-dong and Sanggye-dong.

Due to these measures, since 1977 the ratio of construction of mass housing by the private sector increased significantly. In 1998, only eleven years later, up to 87% of the total production of apartments was from private developers[3].

During the 1980s, the housing deficit increased, especially in the historical center. This favored the emergence of new urban centers within the metropolitan area, in an effort to decentralize the growing population: Gwacheon, Godeok, Mok-dong, Sanggye-dong. These new urban entities -denominated 'new towns'- achieved unforeseen densities, with apartments up to 20 floors high, called 'high-rise' apartments (S.-K. Sohn, 2003, p. 272).

The designation of the city as the venue for the Asian Games athletics of 1986 and the Summer Olympic Games of 1988 further increased the influx of population into the capital and the demand for housing. The villages created to house the athletes and journalists were seen as opportunities to demonstrate to the rest of the world the outcomes of the 'Miracle on the Han River' in the field of housing. At the same time, the international coverage of the events became an extra reason to continue the removal of informal settlements.

6.4 3rd PHASE A 1986 – 1990: CONSOLIDATION OF MASS HOUSING MODELS

Since 1985, South Korea reached a ratio of urbanization similar to that of developed countries. The escalating housing demand in the capital had brought over-densification and speculation in the housing market. In order to address that, in 1990 the administration approved the creation of five satellite cities beyond the municipal area. The main measures approved during this period were:

- Implementation of new anti-speculation measures.
- Creation of the Seoul Development Agency, 1988 (Gelezéau, 2003, p. 175).

This phase could be defined as the 'consolidation period' in the development of mass housing in Seoul. Production slowed down after the large volume of construction during the preceding period. The country had already reached a turning point in its transition towards an urbanized country: from a 50% ratio of urbanization in 1974, it raised up to a 70% in 1985. The majority of indicators of housing quality (presence of toilets with running water, central heating, etc.) had reached levels similar to those of developed countries in Western Europe and North America. The housing deficit also reached a milestone in 1985, as since that moment it started its slow but steady decrease, proving that the mass housing measures implemented until then were being effective. The

3 See Figure 2-7 in Chapter 2, Volume 2.

Olympic Games of 1988 became, thus, the coming out of Seoul and South Korea into the society of developed countries.

A less bright side of all this were the steep hikes in the price of apartments in the most expensive and exclusive areas of Gangnam, which dragged the prices for all the home ownership market. The rampant speculation, together with the lack of rental housing, favored the emergence of a new face of the housing crisis. In order to address this situation, in 1990 the government approved the construction of five satellite cities beyond the Greenbelt (S.-K. Sohn, 2003, p. 276).

6.5 3rd PHASE B 1990 – 1997: EMERGENCE OF THE SATELLITE CITIES AND DECREASE OF POPULATION IN MUNICIPAL SEOUL

This phase spans from the moment the first wave of satellite cities outside Seoul were approved, until the financial crisis of 1997. The main measures implemented were:

- Approval of the creation of five satellite cities within the metropolitan area of Seoul, beyond the municipal boundary, 1990.
- Approval of the Seoul Urban Master Plan for the year 2000, 1991.
- The housing shortage is predicted to be 0% by the year 2002.
- A nationwide gradual liberalization of the price of new apartments was implemented, excepting Seoul, since 1995 (Gelezéau, 2003, p. 175).

The extension of the capital towards its municipal boundaries continued during the period, while at the same time a new urban typology of satellite cities took hold, with the goal to alleviate the density of the inner city.

The planning of these new cities was done hastily, based on criteria of quantity and speed, and they were targeted mostly to the middle and upper-middle class. A new form of private development was tested, through consortiums of private enterprises in order to develop entire urban sectors. At the same time, new typologies were experimented, in order to increase housing densities.

These cities created from scratch offered an unprecedented opportunity to improve the conditions of mass housing and to develop new and autochthonous concepts in terms of their planning, integration to existing urban cores, the design of networks of open spaces and public transportation, etc. Unfortunately, these opportunities were missed, and developers stuck to the tried-and-true solutions they were familiar with. An unexpected consequence of emergence of the satellite cities was a further draw of population towards the metropolitan area, with the corresponding increase in housing demand (S.-K. Sohn, 2003, pp. 278-279).

This phase culminated with the financial crisis that affected East Asia in the winter of 1997. The crisis halted any possible development of decentralized economic activities in the satellite cities, and they remained largely as bedroom communities. This turn of events worsened the growing pressure on public transportation and the saturation of the road network, due to the increase of population commuting to work.

In spite of the issues mentioned above, the fast and lucrative development of the first wave of satellite cities -especially in the cases of Bundang and Ilsan- established their reputation as profitable models to be reproduced, both domestically as well as in developing countries with housing shortages (Yu, 2013, p. 8).

6.6 4th PHASE 1997 – 2008: ECONOMIC DEREGULATION AND URBAN RENEWAL

This period is bookended by the two big financial crisis that have affected South Korea in its recent history: the East Asian financial crisis of 1997 and the 2008 World financial crisis. The main measures adopted were:

- Privatization of the Housing Bank and the Housing and Commercial Bank, 1997.
- Progressive liberalization of the price of new apartments in Seoul and in the satellite cities, starting in 1998.
- Modification of the Seoul Urban Master Plan, 2000.

The 1997 crisis meant an unprecedented blow to the construction sector, and pushed many small and medium construction companies to bankruptcy. The intervention of the government through different protective measures and incentives was key in order to overcome the situation, demonstrating once more the role of the construction sector as one of the main engines of the national economy.

During this period, a growing deregulation of the economy and liberalization of the markets was made evident, related to widespread globalization and to the intervention of the International Monetary Fund (IMF) after the crisis in particular. One of the consequences of the deregulation was the abandonment of the quinquennial economic cycles. The price control on new apartments was lifted, and a system of new purchase taxes was implemented. The immediate effect of these measures on the built environment was increased real estate speculation and the advent of new residential typologies, such as luxury condominiums, mixed residential and office typologies, and medium-density collective housing types, among others.

At that point, after twenty or thirty years from their construction, issues related to the aging and maintenance of the older apartment complexes became a pressing concern. Their replacement through urban renewal processes followed strict patterns dictated by their degree of obsolescence, their location, and floor area ratio limitations. Together with the replacement of the older pioneers of mass housing, the social replacement of the residents follow suit, in parallel to the adaptation of building types to evolving forms of residence and to changes and diversification of household structures.

6.7 AFTER 2008 – : CRISIS OF THE MODEL?

The 2008 World financial crisis also had an effect on the construction of apartment complexes in Seoul. Since the end of 2008, prices stalled and took a plunge. New construction stopped. It was estimated that, only in 2008, there were 110,000 unsold apartment units in the whole country (Asia Pulse, 2008).

As mentioned in the Period of Study[4], the availability of housing reached a 100% in 2002 and it continued to grow since then, up to a 111% in 2009. The decrease in demand, the global recession, the announcement in 2010 of negative demographic growth in the short and mid-term, and the proliferation of alternative types of collective housing have been seen as indicators that the socio-economic context that favored the emergence and predominance of apartment complexes has shifted, and the typology is in crisis.

It is foreseeable that issues related to the maintenance of this massive built legacy, its adaptation to more diversified household structures, the integration with its surroundings, and the social challenges related to these processes will take on a fundamental role in the near future. At the same time, there is an increasing exportation of the forms, the technology and the know-how developed by the Korean construction companies in terms of mass housing to developing countries, eager to emulate the economic success of the 'Miracle on the Han River'.

4 See '1.5 Geographical Scope And Period Of Study' in Chapter 1, Volume 01.

6.8 CONCLUSIONS: MASS HOUSING SERVED DIFFERENT PURPOSES AT DIFFERENT TIMES

The adoption of mass housing served different purposes at different times. It involved different public and private developers, targeted different audiences in different urban locations, and adopted different roles within the city.

Apartment complexes were originally adopted as part of a public housing policy geared to address the chronical housing crisis and targeted to the emerging middle class. Shortly after, they were used as well to resettle the inhabitants of the many informal settlements around the hills of downtown. The policy was short-lived, and soon the government handed over the development of mass housing to the private sector, while adopting a facilitating role instead. While squatter resettlement apartments had been built near the sites of the original shantytowns in the hills around the old city, housing estates for the middle class soon colonized the reclaimed edges of the river. From there, they expanded to the new sectors on the southern banks of it, and later to agricultural land beyond the greenbelt, only to come back to recolonize the old fabrics within the city. Thus, mass housing served as a tool for urban extension, for the colonization of virgin land in the metropolitan area and for urban renewal irrespective of the different contexts.

To address the question of whether the need to provide housing at an unprecedented scale and rate was grasped as a creative opportunity to define a long-term urban vision, or whether housing was understood merely as a quantitative issue limited to the provision of units, the next chapter will look further into the urban roles mass housing estates have adopted over the years.

CHAPTER 7
APAT'U TANJI AND THE PLANS FOR SEOUL

To understand whether the implementation of mass housing in Seoul was considered merely a quantitative issue or whether it was actually integrated within a larger urban vision that understood qualitatively the possibilities entailed in addressing the long-standing housing crisis, this chapter outlines the conclusions obtained from comparing the role apartment complexes played in the different visions for Seoul during the period of study versus what was actually built. It is based on two separate investigations included in Volume 02: *'Apat'u Tanji and the Plans for Seoul'* (Chapter 3), and *'Evolution of Mass Housing Estates in Seoul in Relationship to Urban Infrastructure'* (Chapter 4). Prior to that, a brief introduction is given about the dual nature of the South Korean planning legislation during the period, since it influenced the way mass housing developed.

7.1 VISIONS FOR SEOUL: STATUTORY PLANS VERSUS NON-STATUTORY PLANS

Before studying the role of mass housing in the different plans for Seoul, it is relevant to provide a basic outline of the nature of the planning system in South Korea, in relationship to its wider legal system. As in many other Asian nations, the Korean legal system is based on the German Civil Code (effective from 1900) since, in the late nineteenth century, Germany was seen as a developed and industrialized powerhouse with well-defined administrative systems. In its modernizing efforts, Meiji-restoration Japan adopted the German Code and, in turn, it introduced it to its colonies, where it was influenced by local, customary systems. The German Civil Code is a type of Civil Law where core principles are codified into a referable system, which serves as the primary source of law. Civil Law works by synthesis: it formulates general principles based on abstractions. It was developed from the classic Roman Law and it is the prevalent system the areas under control of the former Roman Empire. In contrast, Common Law systems are based on 'decisional law' made by judges, giving precedential authority to prior court decisions, on the principle that it would be unfair to treat similar facts differently on different situations. It works by analysis of case-by-case, and by establishing relationships to previous cases. Common Law emerged in Britain, from where it spread to its colonies.

These two prevalent legal systems have direct effect on the planning processes in each area of influence. Under Civil Code-based legal systems, urban plans are legally-binding documents that pre-determine the spatial configuration of the city and include economic opportunities for development and the rights to build. Under Anglo-Saxon planning systems, urban plans are neither legally-binding nor formal-binding. They are guidelines which do not grant the right to build, and thus development projects need to be negotiated on a case-by-case basis.

One of the main characteristics of Civil Code-based planning systems is their long-term durability, since once they become codified they achieve legal status. On the flip side, this makes them difficult to adapt to changing conditions and requirements. For this reason, up until recently (2007), South Korean planning laws contemplated two types of documents: Statutory Plans (법정계획, what could be understood as 'urban master plans'), and Non-Statutory plans (비법정계획, what could be understood as 'management plans').

- **Statutory Plans** were general plans that proposed a basic spatial structure for Seoul and a long-term development direction through demographic predictions, provision of infrastructure, land-use, and financial planning. They were implemented at a national level (Seoul as the national capital depends both from the municipal government but also from the central government). Thus, they were bound by law and fixed for the period of their approval. They were meant to be revised periodically, typically every ten or twenty years. They also served as a framework for Non-Statutory Plans. *Ex: the 1966 Ten-Year Plan for Seoul.*
- **Non-Statutory Plans** were developed at municipal level in order to deal with specific and partial issues. Although they were meant to fall within the larger umbrella of the primary plans, they were more responsive and adaptable to real world situations. Thus, they were faster to implement and provided a larger degree of flexibility.

Due to the big differences between the two plans in terms of target years, contents of planning, scale, legal grounds, etc., this dual system struggled to cope properly with the explosive urban growth during the years of fast demographic and economic growth. Since 2007, a third, intermediate step was introduced in order to overcome those limitations.

7.2 ROLES OF MASS HOUSING IN THE DIFFERENT PLANS FOR SEOUL

This segment summarizes the conclusions from Chapters 3 and 4 in Volume 02:

1. Apartment Complexes as Symbols of a Modernization Process that Legitimized the Developmental Regime (1966).

The New Seoul Plan of 1966, presented during the first city planning exhibition held in Korea in occasion of the 1966 Basic Urban Planning for Seoul, showcased modernist planning ideals as the physical expression of a modern national identity. Within that vision, high-rise mass housing estates defined the main axis of the brand new administrative capital and were the residential choice of the political elites. The plan may have not been designed to be implemented, but it established a univocal precedent, as the identification of mass housing with the expression of a modern society and with social status has been a recurrent topic ever since.

This symbolic role of apartment complexes had been instrumentalized by the developmental regime through the newly created Korean National Housing Corporation in 1962 with the construction of the Mapo apartments. They were the first complex in terms of a grouping of different apartment buildings within a closed compound, sharing facilities and open space[1]. The Mapo apartments had very big shoes to fill: they had to prove that mass housing was more space efficient than low-

1 Technically, the Jong-am apartments (종암아파트), built between 1957 and 1958 in Seongbuk-gu preceded the Mapo Apartments. However, since they did not reach the 300 households required later by the Housing Law for a collective housing to qualify as an *apat'u tanji*, it is usually considered the Mapo Apartments to be the first *tanji*.

rise housing and thus were the solution to both the housing shortage and to the improvement of urban appearance. They also needed to prove that the country had the technology and expertise to build them. Since they were more expensive due to the modern materials, techniques and amenities employed, they were initially occupied by politicians and high-ranking public officials, and were seen by the general public as 'dream housing' or 'cultural housing'.

A similar symbolic function was adopted by the apartment complexes featured in the Han River Development Plan of 1967-69, where land reclaimed along the riverbanks was to be dedicated to mass housing.

2. High-Density Mass Housing was not Considered an Option for the Growth of Seoul at the Beginning of the Developmental Period (1961 – 1966).

During the first five-year economic plan (1961 – 1966), the main goal of the developmental regime was the 'growth first' policy, which meant the construction of a self-reliant, domestic economy based initially on labor-intensive export manufacturing. The main urban development goal was to furnish the necessary physical infrastructure to support industrialization and economic growth. Thus, in spite of the symbolic role attributed to apartments as heralds of modernization, addressing the chronical housing shortage and improving the living conditions of citizens were not the main priorities of the administration at that point.

In spite of that, it was evident that the city needed to grow in order to accommodate the demographic explosion. The natural choice was expanding the city across the Han River towards the agricultural area known today as Gangnam, so the river would act as a buffer from the military threat of North Korea. Park Heung-sik, one of the richest businessman in Korea at the time, led the first plan for the development of South Seoul at the request of the military regime. His plan was composed of low-density suburban tracks, influenced by contemporary Garden City-style developments from Japan and by the projects of the Federal Housing Administration (FHA) in the US. Nevertheless, the relatively low density of about 300m^2 per household turned out to be too low to be supported by the poor living standards of the time, and the plan was discarded. A series of proposals followed that kept the low-rise, suburban model: the 1966 South Seoul Plan by the Seoul Metropolitan Government -heavily influenced by the planning of Tama New Town near Tokyo of the preceding year-; and the Housing, Urban and Regional Planning Institute's[2] South Seoul Plan of 1967, which did increase density up to the Institute's own urban design recommendations for Korea.

After the construction of the third river over Han River, the Highway to Busan and the Yeongdong land Readjustment Projects of 1968 and 1971, many parts of the area were actually developed through tracks of detached houses, especially in Apkujeong-dong, Hak-dong and Cheongdam-dong (Sohn, 2003, p. 271).

3. The Failure of Kim Swoo-Geun's Utopian Plan for Yeoeuido Became a Precedent for Favoring Practical Problem-Solving over Theoretical Experimentation (1969).

Following the Japanese Metabolists, and in particular Kenzo Tange's Tokyo Bay project, Kim Swoo-geun's proposal for the development of Yeouido was the first attempt to come up with an urban model specifically catered for Seoul's specificity: a large and dense metropolis, undergoing unprecedented economic, urban and demographic growth with a scarcity of buildable land (see '3.5 Yeouido Plan, 1969' in Chapter 3, Volume 2).

Mass housing was the only residential type contemplated, and it was tightly integrated within an urban system that departed from western references. It was not just a symbol as the New Seoul plan had been; but rather an operative model: Kim worked out a holistic urban system that relied on a linear organization based on connected loops of elevated highways. This central spine contained business and administrative functions that could be re-arranged over time without affecting the overall configuration. Perpendicular arteries

2 See Oswald Nagler in Appendix 1, 'Who's Who', in Volume 2.

connected to neighborhood units with their corresponding facilities in the periphery. The island was meant to be a self-contained urban enclave, and since traffic was elevated, the ground plane defined a continuous pedestrian realm.

According to Inha Jung, the failure to implement Kim's plan (blamed on the excessive costs related to the construction and maintenance of the elevated transportation megastructure; the fear it would depreciate the land value of the surrounding properties; and the conflict with President Park's request for a central ceremonial space) was a symptom that Korean society was not ready to experiment with theoretical proposals (Jung, 2013, p. 55). The pressing problems facing the city demanded the implementation of tried and trusted planning methods, and there was neither time nor funding for experimentation.

The failure of Kim Swoo-geun's utopian plan for Yeouido became a precedent for the adoption of planning solutions that had already been tested and proved elsewhere. Urban planning became a highly bureaucratic and top-down undertaking, characterized by efficiency, practicality, feasibility, problem-solving and reactive rather than proactive. It relied on the adaptation of foreign cases rather than on experimentation, investigation and the production of its own theoretical models.

4. The Failed Project to Implement Mass Housing as a Squatter Resettlement Strategy (end of the 1960s).

The 1966 Basic Urban Plan for Seoul already contemplated the use of apartment complexes as a tool for squatter resettlement in the hills surrounding the historical center.

With the second five-year economic plan launched in 1967 by the central government, national housing policies addressed more actively the 'housing problem', under the motto 'one house per household'. This meant that, while until then the efforts of the Korea Housing Corporation had focused on introducing apartments to the elites in order to promote them as a modern lifestyle in a trickle-down manner, from that moment the administration expanded the scope of mass housing in order to provide for the poor. Kim Hyun-ok, the Mayor of Seoul, embraced the national policy with the 'Citizen apartments' project in 1969.

The project was not only a charitable endeavor, as it fulfilled multiple other goals: to make urban structure more efficient by optimizing land use; to increase housing density and rationalize street layouts; to improve urban appearance; and finally to provide employment for the construction sector. The adoption of mass housing to remove and resettle squatters drew heavily from the housing policies of other East-Asian developmental regimes since the 1950s, such as Hong Kong and Singapore[3].

The failure of the project due to the lack of construction expertise, inappropriate funding, unrealistic construction terms and corruption was a tilting point in the evolution of mass housing in South Korea. In a radical departure from those East-Asian developmental references, the government stopped funding housing for the poor, and focused on building housing for the emerging middle class. It also shifted gradually the responsibility for development to the private sector, while stepping back and adopting the role of facilitator of the whole process.

5. The Conflicting Agendas of the Central and Local Governments Prevented the Full-Fledged Implementation of Mass Housing (1970s).

The municipal government was under military rule since the military coup that effectively terminated the Second Republic and established General Park Chung-hee as the head of the Military Revolutionary Committee on May 16th 1961. Lieutenant general Yoon Tae-il became the mayor of Seoul and a special legislation put the capital under the direct supervision of the Prime Minister. Each administration had different agendas, which conflicted in terms of what the vision for the city should be.

3 The location of the citizen's apartments is shown in Figure 4-3 in Chapter 4, Volume 02.

On the one hand, Seoul municipality was suffering from a chronical housing shortage since the 1920s[4]. This situation was being exacerbated by the aggressive developmental policies of the new central government, which concentrated economic opportunity in the capital. The population of 2.5 million in 1960 rose quickly to more than 5 million by 1970, an average of 250,000 people per year. The municipality knew it had to implement practical measures to cope with such demographic crisis and initiated the 1972 Basic Urban Plan for Seoul. The development of Yeouido was underway, as well as that of Gangnam after the construction of the Third Bridge over the Han River (Hannam bridge) and the Gyeongbu Highway.

On the other hand, a series of domestic and international events at the beginning of the 1970s threatened national security and brought political instability. Internally, the collapse of the Waw apartments in 1970 and the riots resulting from the forced eviction and resettlement of squatters to the city of Gwangju in 1971 brought social unrest. Abroad, inter-Korean relationships deteriorated and the threat of military retaliation loomed over the capital. At the same time, under the Third Republic's constitution, the president was limited to two terms in office. This context lead to a self-coup on October 1972, through which President Park assumed dictatorial powers: the October Restoration (시월유신).

The immediate effect on city planning was a concern for national security. Population nation-wide was to be dispersed in order to prevent concentration in major urban hubs for fear of attacks from North Korea, especially in Seoul, which was only 40km from the Demilitarized Zone (DMZ). Overpopulation in Seoul was to be curbed, urban areas reduced rather than expanded, farmlands and natural areas were designated for preservation, and the Greenbelt was hastily implemented. The fall of South Vietnam, Laos and Cambodia to communist forces in 1975 provided further fundaments for President Park's shift in spatial policy. In a 1977 presidential address, he announced the relocation of the capital beyond the reach of the North Korean threat. This caused the abandonment of ongoing long-term plans for Seoul: the developments of the Han River and Gangnam were put on hold even though the government had already made large investments, and central urban expansion proposals were cancelled (J.-i. Kim, 2011, p. 192).

The conflict of interests between the two administrations severely crippled the development of a vision for the future of the city. It was within this context that the Basic Urban Plans of 1972 and 1978 were turned down by the central government.

6. Adoption of Mass Housing to Compose Urban Facades Along Regional Infrastructures (mid 1970s).

In spite of the central government's population control and decentralization policies, during the 1970s the Seoul Metropolitan Government decided to dedicate large tracks of land exclusively to the construction of mass housing on the south banks of the river: the Jamsil New Town (1974) and the Yeongdong Apartment District Plan (1976). There had been precedents of large *apat'u tanji* built on the south bank of the river (Banpo Apartments, 1972) and even modest attempts to define mass housing sectors (Icheon-dong, 1970), but never at such scale. This meant a radical shift from the low-density Garden City models adopted up until then for the development of Gangnam. Even though in a simplistic way, this was a first attempt to invest areas of mass housing with an urban role beyond the boundaries of each individual complex. Districts dedicated to mass housing were located mostly along the southern flank of the river and extended south along the Gangbyeon Highway with the intention to compose a unified urban façade as a backdrop to those regional infrastructures.

The Jamsil New Town was planned later, so it could benefit from the experience gained in the development of Gangnam. Conditions were also more favorable, as land was obtained through reclamation of the riverbed, so there was no need to deal with previous owners; and a single design responsible could oversee the whole process.

4 See Figure 4-3 on page 81 and Figure 4-4 on page 83 in Chapter 4, Volume 01.

Another important feature in Jamsil was the adoption of the neighborhood unit theory, even though it was not so much due to its original role to facilitate community building as much as to define modules of development, as well as to provide the necessary residential amenities.

The effects of the plan are evident in the evolution from Figure 4-4 to Figure 4-5 in Chapter 4, Volume 02. The sequence of Figure 4-3, Figure 4-4 and Figure 4-5 also shows the transformation of the river according to the ambitious Han River project.

7. The Whole-Hearted Adoption of Mass Housing Lead to the Planning of New Towns in the Undeveloped Frontiers of the City (1980s).

The conflict of interests between the central government's strategies for population dispersion and the municipal government's urge to address the demographic boom and the related housing crisis was resolved after the assassination of President Park in 1979. The late president's project to build a capital from scratch far from the reach of North Korea's military power was put on hold, and his population control and redistribution policies were gradually abandoned (Choe, 2003, p. 526). Thus, since the beginning of the 1980s, the city embraced growth and urban planning could finally be dedicated in earnest to tackle the enormous problems facing the city.

Mass housing was embraced as the only possible solution to the 'housing problem', to the degree that in 1983 the government of Hwan Chun-doo demanded the mayor to address the housing crisis and the accelerating real-estate speculation by providing large quantities of rental housing. This spearheaded the evolution of mass housing in three different directions: the expansion of residential areas, the appearance of high-rise apartments (Sohn, 2003, p. 272), and a streamlined method to plan and build massive urban enclaves based on mass housing – the new towns (신시가지, *sinsigaji*).

Based on previous experiments of large tracks of land developed solely through mass housing, a series of new towns were planned, pushing the boundaries of the city to new frontiers: Gwaecheon beyond the southeastern boundary of Seoul (1980); Gaepo-dong in the southeast (1981); Mok-dong in the southwest (1983); Sanggye in the northeast and Godeok-dong in the east (1984). Their evolution can be traced since Figure 4-5 in the series of maps describing the evolution of mass housing in Seoul in relationship to infrastructure, in Chapter 4 of Volume 02.

In order to develop these new massive urban entities, new planning methods were deployed. Instead of the traditional land readjustment method inherited from the Japanese, in 1981 the government facilitated the acquisition of land for housing development through the Promotion of Housing Site Development Act. The law facilitated the creation of the 'Housing Site Development' method (HSD, 택지개발, *taegji gaebal*), through which the public sector would be responsible for all the processes of acquisition, development, supply, and management of residential land; and thus could develop mass housing in a comprehensive manner.

In parallel to this new planning tool, a series of strategies that had been tried independently until then started to be integrated and standardized into a systematic mass housing technology, geared to streamline the supply of mass housing: the formation of urbanizable land through land reclamation; the layout of street networks in order to define urban blocks as units of intervention; the design of linear growth structures based on central spines of services; the use of neighborhood units or 'living zones' as a system to determine the need for amenities for the population; and the provision for alternative networks of pedestrian paths and open spaces; among others. The expertise gained in the development of these new towns was later pressed into service in the planning of the five satellite cities beyond the greenbelt during the 1990s.

8. Mass Housing as a Tool for Inner City Renewal (since the 1980s).

Seoul experienced an impressive residential renewal process since the early 1970s, mostly due to the changing needs of the growing urban middle class and to the expectation of financial investment through real estate speculation. This perpetual process of urban renewal has had its legal basis on two laws at national level: the *Housing Construction Promotion Act* (1972, amended 1977) and the *Urban Renewal Act* (1977), which intended to facilitate access to home ownership for the middle class with minimum public expenditure. In 1983 the government introduced an urban renewal system known as *'Joint Redevelopment'* (JR). The system was based on the formation of a voluntary contract between property owners, residents associations and developers. This contractual partnership relied on the economic profit to be obtained from the difference between the built floor area ratio (FAR) and the maximum possible. Owners provided the assembled land, private construction companies provided the capital and executed the project, and the government defined clearance areas and authorized building removal. In return, each property owner received back built area proportional to his/her contribution, and the construction company made a profit by selling the extra units. The municipality also benefited by collecting taxes from the construction and the real estate transactions.

The success of this partnership was based on the special combination of two preconditions: the possibility to develop high-density housing in order to maximize built areas (which the city favored), and a chronic housing shortage in the capital for most of the century, that ensured a market eager to buy housing (See Figure 10-11 on page 87, Volume 01). These preconditions, together with the reduction of construction costs and the optimization of financing, favored the choice of apartment complexes as the hegemonic residential solution. Another consequence of the Joint Redevelopment system was the accelerated removal of squatter settlements in Seoul. There are two basic types of Joint Redevelopment projects: public residential redevelopment or private residential renewal.

Public residential redevelopment (재개발):

Known as *Jae-Gae-Bal* (JGB), is a housing renewal program supported by the City, who defines target areas for renovation. It was originated in the strategies for squatter clearance from the 1960s and 1970s, and it became very popular since the early 1980s with the implementation of the JR system between owners and development companies. It also expanded its focus towards the redevelopment of substandard housing in general.

JGB projects are found in areas where squatter settlements were located in the 1960, typically hilly areas near downtown (Sungbuk-gu, Sungdong-gu, Mapo-gu, etc.) but also in areas where squatters from those areas had already been relocated during the 1960s and 1970s, such as Gwanak-gu in the south.

Private residential renewal (재건축):

Jae-Gun-Chuk (JGC) denominates the voluntary joint renewal of a group of properties by their owners, typically in an old mass housing estate. Their scale can vary greatly, depending on whether it is a single estate or a group of estates within an area designated as Apartment District. According to the Housing Construction Promotion Act (1972), the JGC system could be implemented in apartment complexes older than 20 years not complying with minimum structural safety standards. The program gained popularity specially after 1990, since the generalization of apartment complexes started in the decade of the 1970s. It targeted complexes typical of the time, characterized by small units (below 60m^2), lack of modern amenities (no elevator, no central heating), maintenance issues due to poor construction techniques, and tenants with limited means. The replacement of these housing types by larger, more modern and more expensive units and the lack of proper social housing strategies implied the significant loss of affordable rental units (K.-j. Kim, 2004).

230,456 buildings were demolished between 1973 and 2008 as a consequence of the JR system, and 492,381 new units were built. Most of the squatter settlements of Seoul disappeared during the period, and gentrification brought a

process of social substitution: only about 40% of the property owners and 10% of tenants returned to the redeveloped areas upon completion (Kyung; Kim, 2011).

The emergence of this new type of logic of distribution of *apat'u tanji* can be traced in the evolution of maps in Chapter 4, Volume 02, since Figure 4-5. From this moment on, apartment complexes were not anymore part of a coordinated new structure of urban growth as they had been with the new town projects up until then. They constituted individual fragments spread throughout the city with no apparent spatial rationale, following instead the logic of the market.

9. Systemic Implementation of Mass Housing in Subway Catchment Areas (1980s – 1990s).

The Seoul City Master Plans of 1984, 1990 and 1997 all contemplated the densification of the catchment areas of the subway stations, in parallel to the comprehensive implementation of the public transportation infrastructure. This form of transit-oriented development (TOD) was probably the most comprehensive and systemic strategy devised in terms of the location and role of mass housing in relationship to the rest of the city. Nevertheless, the administration lacked the means to implement it in practical terms. Even though it is evident that the development of large areas of mass housing in Gangnam and Jamsil in the 1970s and 1980s were tightly related to the construction of subway lines #2 and #3[5], the construction of apartment complexes during the second half of the 1980s and the 1990 shows an irregular pattern of distribution that does not consistently reflect the location of subway stations[6]. The logics observed in the period obey rather to the completion of earlier new town projects (to many of which subway was provided afterwards), and to the 'Joint Redevelopment' (JR) projects already explained.

There were two main reasons for this:

- The subway infrastructure was implemented late in regards to the explosive growth of the city during the 1960s and 1970s. Therefore, it was not integrated with other urban growth measures, such as the road infrastructure, the placement of new towns, etc. A good example of this is the lack of public transit provision in many of the plans up until that time, such as in the 1966 Plan for New Seoul, the plan for Gangnam (1968), the plan for Yeouido (1969), the location of the *citizen's apartments* (1969), the planning of Jamsil (1974), the Yeongdong apartment district plan (1976), or the Han River development project (1981). This resulted in the lack of mass transit provision for many of the first *apat'u tanji* built far from the city center along the river (Hangang Mansion, Yeouido Sibum, Banpo, Hyundai Apkujeong, etc[7]. Furthermore, it is quite striking the omission of mass transit even in the plan for Mok-dong New Town as late as 1983. Instead, development had relied on a strong bus network and on private transportation for those who could afford it. Not only this delayed the implementation of the subway infrastructure, but also the flexibility and adaptability of the bus system worked against transit oriented development, since land uses did not have to adapt to the fixed infrastructure over time and did not consolidate into a railway-based urban pattern, as it had been the case in Tokyo since the early twentieth century (Park, 2005).
- Another important factor was the strong urban control system implemented with the designation of strategical development areas around subway stations, which limited profit for developers and thus made them less attractive for investment (Park, 2005).

5 See Figure 4-5, Chapter 4, Volume 02.

6 See Figure 4-6 and Figure 4-7 in Chapter 4, Volume 02.

7 See Figure 4-3 and Figure 4-4 in Chapter 4, Volume 02.

10. The Satellite Cities in the Metropolitan Area aAs a Missed Opportunity to Innovate in Mass Housing (1990s).

The implementation of the Greenbelt in 1971 with the goal to prevent the extension of Seoul into the metropolitan area, control population growth, establish a security buffer for military purposes, and preserve natural resources was not free of controversy. The measure limited buildable land and thus increased population density within the city proper, with the consequent worsening of the housing shortage and of real estate speculation.

The five satellite cities built in Ilsan, Bundang, Jungdong, Pyeongchon and Sanbon beyond the greenbelt were part of the national 'Two Million Housing Construction Plan' (주택 200만 호 건설 정책), initiated under the first democratic regime of Roh Tae-woo. Besides addressing Seoul's housing problem, the project attempted to gain political support for the new regime and to form coalitions between the state and the private sector (Yu, 2013). Mass housing was adopted in earnest in order to maximize density and reduce construction costs, and the planning incorporated the necessary infrastructure and amenities comprehensively. The satellite cities offered an unprecedented opportunity for the further development of the mass housing model in different aspects, including the improvement of their urban planning, the quality of architectural design, development of housing typologies and community building, among others. But that opportunity was missed, due to several factors (Sohn, 2003, pp. 278-279):

- The main concerns were quantitative: to provide large amounts of housing in order to control housing prices and meet the tight deadlines. Thus, plans had to be drafted hastily in order to provide housing as fast as possible.
- Therefore, there was not time for participatory planning in order to listen to the opinions of future residents or to consult with planning and housing experts.
- Apartments in the satellite cities were targeted to middle and upper income brackets. Only 40% of the total housing stock provided were under 18 *pyeong* (around 60 m2), so the satellite cities did not contribute to alleviate social inequalities related to housing.
- The development of the five satellite cities was done through a syndicate of private construction companies since the early stages. This resulted in different enterprises competing against each other in the same area. This could have been an opportunity for innovation through sophisticated site planning and urbanistic features, but instead they simply focused on differentiating themselves through formal aspects and the quality of construction materials.

In contrast with many Western experiences, the first wave of new towns -Bundang and Ilsan in particular- were financially quite successful. This was due to the particular political situation and to the unique housing market conditions in Korea at the time:

- The chronic housing shortage in Seoul during the twentieth century, as shown in Chapter 10, Volume 01.
- The developmental regime, with direct control and intervention on the economy and the development of housing.
- An established housing financing system based on private demand, paid through sales in advance.
- The political goal of gaining support for the first democratic government of Roh Tae-woo, who despite winning the elections was still related to the previous military regime of Chun Doo-hwan.
- A very limited timeframe, as the 'Two Million Housing Construction Plan' was seen as a quick fix for the political challenges of the Roh regime and thus had to coincide with the 5-year presidential term.

The fast and profitable development of Bundang and Ilsan established a reputation for Korean new towns being profitable and inspired a lasting reliance on this type of development and their emulation in developing countries (Yu, 2013).

The growth of the satellite cities is not shown in the evolution of mass housing in Seoul in relationship to urban infrastructure in Chapter 4, Volume 02, since they are considered out of the scope of the present thesis due to their specific conditions[8].

11. New Town Project (2000s – early 2010s).

The project incentivized inner city renewal through Joint Redevelopment (JR) projects in 26 residential areas, mostly on the north side of the river. For a neighborhood to be included in the project, it had to meet at least one of the following requirements:

1. Underdeveloped areas in need of comprehensive planning in order to be developed;
2. Areas with chaotic urban structure as a result from disorganized development in the past, which needed to be redeveloped in order to attract new housing and commercial services;
3. Areas in the process of urban decay, with bad quality of housing stock and weak urban infrastructure (roads and/or open space) due to lack of maintenance in delayed redevelopment projects.

The underlying goal of the project was to overcome regional inequality between Gangnam and Gangbuk due to the unbalanced concentration of urban functions on the south. This had been one of Lee Myun-bak's electoral pledges during the 2002 mayoral election campaign. Since inner city renewal strategies had typically been driven by the private sector, their main goal was economic profit and lacked the scale and ambition to tackle larger infrastructural or environmental issues. Based on the financial success of the satellite cities, the New Town project attempted to provide a new framework for the redevelopment of deteriorated or underdeveloped housing areas on a large scale through mass housing. The ultimate goal was to provide a level of urban infrastructures, residential amenities and open spaces comparable to those found in the high-end apartment complexes in Gangnam.

In spite of the financial success of the initial pilot developments, the negative social and urban impacts of the project soon emerged. Gated communities replaced traditional fabrics without any type of continuity with previous street patterns, urban fabrics, nor open space networks. Original tenants were evicted since there were no measures to protect them from the gentrification process, thus deepening the social inequality the project was meant to address. These issues, combined with the economic uncertainty resulting from the 2008 global financial crisis and diverse management problems lead to the gradual cancellation of the project since 2012 under Park Won-soon's term.

8 See '1.5 Geographical Scope and Period of Study' in Chapter 1, Volume 01.

7.3 CONCLUSIONS:

1. Mass Housing in Seoul Adopted Different Urban Roles in Different Periods

As the final map in the evolution of mass housing estates in Seoul in relationship to urban infrastructure features[9], the adoption of mass housing as a solution to deal with the housing crisis followed different rationales over the years. There was no long-term urban vision, but rather a layering of different logics over the period of implementation, responding to the changing political and economic context and to fast societal changes.

The advent of the developmental regime established with the Third Republic after Park Chung-hee's *coup d'état* in 1961 initiated a process of accelerated modernization, economic growth and urban development in parallel to a project of national identity building, the emergence of a new urban middle class and the introduction of the consumer society. Apartment buildings quickly became part and parcel of a new urban model that embodied the ideals of the developmental estate, as expressed in the Mapo apartments of 1962[10], in the New Seoul City Plan of 1966[11], and in the Han River Development Plan of 1967-69[12]. However, in spite of those iconic projects, the large-scale implementation of mass housing would take some time. Initially, low-density, low-rise housing typologies based on the Garden City were adopted, but the model was soon discarded after it was proven too costly on land and resources[13]. Soon after, Kim Swoo-geun proposed a holistic urban system for Yeouido, designed to cope with the specificities of Seoul as a dense metropolis undergoing an unprecedented urban development due to a demographic explosion with a scarcity of buildable land, based on Japanese Metabolist concepts of the period. The cancelation of the project for fear of its economic viability made evident that the realities of the problem at hand did not support experimentation. Urban planning was to be strictly approached from a problem-solving attitude by adapting tried and true solutions from abroad, with a focus on economic profit[14] (Jung, 2013, p. 55). Later, mass housing was adopted as a solution to resettle squatters from the many shanty towns in the hills around the old city. The failure of the project brought an abrupt end to the public provision to low-cost rental housing for squatter resettlement[15]. From then on, mass housing would be targeted to the emerging urban middle class, and the responsibility for its development shifted to the private sector.

In parallel to those events, the central and local administrations had opposing agendas for how to deal with population density in the capital. The national government pushed for decentralization and redistribution of the population throughout the metropolitan area in the face of the permanent military threat from North Korea. President Park himself believed the best option was to build a new capital further south, an idea that undermined important ongoing projects during the 1970s such as the Han River development project and the development of Gangnam. In the meantime, the municipal government had to provide a solution for the increasing housing crisis, but to adopt mass housing as a full-ledged strategy would go against the aforementioned population policies of the central government. It would not be until the 1980s, after the assassination of President Park, when the decentralization policies would start to lose steam and finally mass housing was adopted as the only possible solution to the 'housing problem'. A series of new towns extended the boundaries of the city: Gwaecheon (1980), Mok-dong (1983), and Sanggye (1984)[16]. The unrestrained adoption of apartment complexes would be reflected in the 1984, 1990 and 1997 Seoul City Master Plans, which for the first time included a holistic strategy for the location of mass housing in relationship to mass transit

9 See Figure 4-8 in Chapter 4, Volume 2.
10 See Case Study #01 in Chapter 7, Volume 02.
11 See '3.1 New Seoul City Plan' in Chapter 3, Volume 2.
12 See '3.3 Han River Development Plan' in Chapter 3, Volume 2.
13 See '3.4 Planning of Gangnam: Yeongdong Land Readjustment Projects' in Chapter 3, Volume 2.
14 See '3.5 Yeouido Plan' in Chapter 3, Volume 2.
15 See '3.6 Citizen's Apartments Project' in Chapter 3, Volume 2.
16 See '3.12 Planning of Mok-dong New Town' in Chapter 3, Volume 2.

(TOD)[17]. Alas, these policies had little effect, since the subway infrastructure was implemented late in regards to the explosive growth of the two preceding decades[18]. Instead, apartment complexes built during the 1980s and 1990s tended to fill in new town areas planned earlier, or to target urban renewal projects through 'Joint Redevelopment' (JR) projects by private developers, following the logics of the market, and without a coordinated overall strategy for their location.

The construction of the five satellite cities beyond the greenbelt since 1990 shows a different strategy for the location of mass housing: given the lack of buildable land within the city, the lack of rental housing and the increase in demand and in housing prices, the government decided to build a significant amount of housing stock in cheap land outside the city. In spite of their financial success, the quantitative focus of the satellite cities prevented them from developing the mass housing model in terms of new urban, architectural, and social paradigms[19] (Sohn, 2003, p. 278). Finally, the New Town project since 2002 championed mass housing to streamline urban renewal in 26 deteriorated residential quarters in the northern side of the city, with the goal to address regional inequality. Unfortunately, the project lacked the means to protect original tenants from gentrification, and it only worsened the social inequality the project was meant to fight[20].

17 See '3.13 Seoul City Master Plan, 1984', '3.14 Seoul City Master Plan, 1990' and '3.15 Seoul City Master Plan, 1997' in Chapter 3, Volume 2.

18 See '9. Systemic Implementation of Mass Housing in Subway Catchment Areas (1980s – 1990s)' earlier in this chapter.

19 See '10. The satellite cities in the Metropolitan Area as a missed opportunity to innovate in mass housing (1990s)' earlier in this chapter.

20 See '11. New Town Project (2000s – early 2010s) earlier in this chapter.

2. Mass Housing as a Technology for the Standardization of City-Making

The impact of the construction of hundreds of thousands of new units within housing estates on the urban structure - the essence - of the city was not contemplated from a qualitative point of view as an opportunity to come up with a new urban model during the years of fast growth. However, the process of trial and error geared towards the large-scale provision of housing units in a systematic way did manage to consolidate over time into a technology for the standardization of fragments of the city. 'Technology' here is understood as the practical application of knowledge through the creation and use of technical means and their interrelation with life, society, and the environment. This practical know-how was based on the gradual and piecemeal borrowing, adaptation and integration of planning and architectural processes, strategies and formal models at different scales over time.

The incremental assembly of those tools into a holistic *modus operandi* is evident from the evolution of urban plans for Seoul shown in Chapter 3 of Volume 2. The planning of Mok-dong (1983) was a turning point[21], as it integrated several methods that until then had been employed in a fragmented manner: land reclamation of the nearby stream, the design in different scales through the 'living zone' theory, and the overall linear development along a central spine of amenities. The project also introduced the Housing Site Develoment (HSD) strategy for the first time as a tool to acquire buildable land, improving from the Land Readjustment Projects widely used until then. These tools had all been borrowed and adapted from abroad, and continued to be developed and perfected gradually with every new phase in the evolution of mass housing in Seoul, incorporating new techniques along the way. In particular, the planning of Mok-dong influenced the construction of the satellite cities since 1990, which in turn became a strong reference for the planning of the New Town project in Seoul since 2002.

21 See '7. The Whole-Hearted Adoption of Mass Housing Lead to the Planning of New Towns in the Undeveloped Frontiers of the City (1980s)' earlier in this chapter.

These planning and architectural processes, strategies and formal models are:

1. Tabula Rasa
2. Making artificial land
3. Strategies to optimize the acquisition of land for mass housing
4. Street grids as frameworks for urban development
5. The urban block as a unit of development
6. The neighborhood unit and its evolution to the 'living zone' theory
7. Linear structures of growth
8. The idea of the 'New Town'

The next chapter develops further the idea of mass housing in Seoul as a technology for the standardization of city making and elaborates on these tools.

CHAPTER 8
MASS HOUSING AS A STANDARDIZED TECHNOLOGY FOR CITY-MAKING

This chapter describes the body of architectural and planning strategies deployed for the streamlined development of mass housing in Seoul, transforming the construction of *apat'u tanji* into a standardized technology for city-making.

The assembly of those tools initially borrowed from elsewhere was done empirically through trial and error, by improving incrementally issues raised by the evolution of mass housing as they appeared. For instance, the planning of Jamsil New Town attempted to address issues raised in the earlier planning of Gangnam, such as the excessive dimensions of the super-blocks, the chaotic distribution of building types and activities in the area, the lack of centrality, etc. The planning of Mok-dong in 1983 was a watershed in that evolution, due to the amount of solutions integrated in the design, which until then may have appeared but in a much less coordinated manner. This break-through was not a random occurrence. It was triggered by changes in the legislation, which showed that finally the central government embraced mass housing as the solution for the housing crisis – mainly the approval of the Law for the Promotion of Development of Housing Land of 1980; and the creation of the National Fund for Housing in 1981. Another important reason was the gradual shift of the construction of mass housing towards the private sector, as the concern for economic profit under the government's control of the price of new housing pushed for the rationalization of the construction process. The jump to the construction of the satellite cities in the metropolitan area since 1990 allowed for the refinement of the technology, in an environment freer from pre-existence

These methods may be applied together in a co-ordinated fashion or in a selective way, depending on the scale of the development and on whether they are used in a project of urban extension, in inner city renewal, or as part of a new urban entity developed from scratch.

The explanation of each strategy includes its historical origins and its routes of introduction to Korea, in order to emphasize both the role of modern architecture and urbanism as a global knowledge transfer as well as the creative aspect of the process of local adaptation.

8.1 TABULA RASA

> *"…Western architecture is based on a myth of the tabula rasa – a new beginning in the old world."*
>
> (Koolhaas & Obrist, 2011, p. 57)

Tabula rasa is a Latin expression usually translated as 'blank slate' or 'erased slate', in reference to the typical tablet (*tabula*) used for taking notes in ancient Rome[1]. In architecture and urbanism, the expression refers to design proposals that do not take into consideration pre-existences, either because they are not regarded as relevant, or because they have been obliterated. Thus, the expression implies a new beginning, free from past influences. The rejection of historical time was one of the main features of modernist architecture and urbanism, in direct opposition to the palimpsest model, which understands the built environment as the result of the accumulation of physical interventions over time.

Tabula Rasa in Modern Architecture and Urbanism

As Manuel de Solà-Morales wrote, the concept became relevant along with the emergence of the functional city ideal in Germany during the 1920s, out of a *"desire to organize cities according to the criteria of functional specialization, the importance of road traffic, and the hygienic opening up of enclosed spaces, in both buildings and public highways".* The author added *"…the most surprising aspect of this doctrine […] was the illusion that it would be possible to completely eradicate the existing city in order to develop a completely new urban structure, valid for the whole world. The radicalism with which the proposals that had the widest repercussions denied any value to the city of the past went hand in hand with a naïve trust in modern slogans about the development of the cities of the future"* (Solà-Morales, 1989, p. 6).

One of the fiercest advocates of the *tabula rasa* in modern times was Le Corbusier. His crusade against the traditional European city through functionalist urban concepts, formalized in the Radiant City model, influenced proposals such as the Plan Voisin for Paris[2], the project for the left bank of Antwerp, or the proposal for the reconstruction of Moscow in the 1920s and early 1930s. He was also a proponent of the *tabula rasa* in various colonial urban experiments, such as the Plan Obus for Algiers ('*obus*' literally means *'artillery shell'* in French) of 1933, or the plan for Addis Ababa in Ethiopia of 1936. Le Corbusier's influence in the CIAM allowed him to enshrine the principles of the functional city in the Athens Charter.

After World War II, the state of destruction of many European cities on both sides of the Iron Curtain afforded an ideal *tabula rasa* for the implementation of reconstruction projects based on ideals of the functional city. The dual role of the blank slate as a destructive force but also as a liberating one acquired a completely new proportion in Japan. A series of natural and man-made events occurring within 10-year intervals made the blank slate a familiar concept and enforced a culture of urban experimentation at a large scale: the Great Kanto Earthquake that devastated Tokyo and Yokohama in 1923[3]; the colonization of the vast plains of Manchuria since 1932; and the US fire and atomic bombs that ended the war in 1945[4] (Koolhaas & Obrist, 2011, p. 57).

Tabula Rasa in South Korean Urban Modernization

The idea of the *tabula rasa* has been adopted in Korea in different occasions during the twentieth century. The concept was first introduced in a master plan for Seoul in 1928 by the so-called Study Group for Gyeongseong, integrated by colonial technocrats and pro-Japanese collaborators. It proposed the renovation of downtown Seoul by first wiping out the area, in order to reconstruct it with Western-style street grids flanked by residential blocks through land read-

1 These tablets were *"…thin slips of wood or other material, usually of an oblong shape, covered over with wax. The wax, which was written upon by the stylus, was colored […], so that the letters marked by the stylus were white. […] the tablets were renewed by scrapping off the old and pouring fresh melted wax over them…"* (Smith, 1898, pp. 608-609).

2 See Figure 8-1

3 See Figure 8-2.

4 See Figure 8-3.

justment projects[5]. The idea drew heavily from the Earthquake Recovery Plan established in Japan after the 1923 Great Kanto Earthquake, which provided the opportunity to restructure Japanese cities and to transform them into modern ones[6] (I. Jung, 2013, p. 14).

The Korean War left Seoul in ruins, as the front reached it three times. It is estimated that, out of the approximately 190,000 homes existing in Seoul at the outset of the war, half were damaged by bombing or fire, and about 30% needed to be restored[7] (S.-K. Sohn, 2003, p. 241).

Another instance of the culture of tabula rasa resulting from the fact that an armistice was never reached after the war was the recurrent obsession to found a new capital beyond the reach of the military power of North Korea, since Seoul is located at a mere 40 kms from one of the world's most heavily armed border, the Korean Demilitarized Zone (DMZ, 한반도 비무장 지대). Besides obvious national security reasons, the opportunity to start anew, free from the nuisances of the vernacular city, empowered the development of a modern urban model for the new republic, legitimizing the developmental regime.

Mayor Kim Hyun-ok was another fervent proponent of *tabula rasa*. Keen on expressing himself through succinct mottos, soon after becoming the Mayor of Seoul in 1966 he declared in an interview that *"Tearing up is my philosophy"* (KT, 15 July 1966). He was determined to eliminate all 136,350 recorded squatter homes in Seoul within three years (Mobrand, 2008, p. 375), one of the reasons for which he would be known as the 'Mayor Bulldozer' (부도저 시장). Even though he did not succeed, the slum clearance projects did not end with the infamous failure of the Citizen's Apartment Project in 1970 and his eventual resignation. The forced eviction of informal settlers in the following decades would become one of the largest governmental eviction processes known, amounting up to 720,000 forced evictions in Seoul for the 1983-90 period only (Habitat International Coalition & United Nations Centre for Human Settlements (UNCHS), 1996, p. 246).

The extension of Seoul through new towns and satellite cities in the periphery catered to mass housing estates since the 1970s favored a perception of the natural surroundings as a blank slate. The fact that many of those territories had been obtained through either the reclamation of water courses or the levelling of the original topography supported their perception as devoid of any pre-existence.

Finally, once available land in the municipal territory had been used up, the last iteration of the *tabula rasa* has been the re-colonization of the inner peripheries of the city. The Joint Redevelopment projects (JR) are carried out through the complete destruction of traditional fabrics and their transformation into isolated enclaves, which maintain absolutely no continuity with previous street layouts, building typologies or social networks[8].

5 See Figure 8-25.
6 See Figure 8-16.
7 See Figure 8-4.
8 See Figure 8-5.

Figure 8-1. Model of Le Corbusier's Plan Voisin for Paris (1925).
Source: Fondation Le Corbusier.

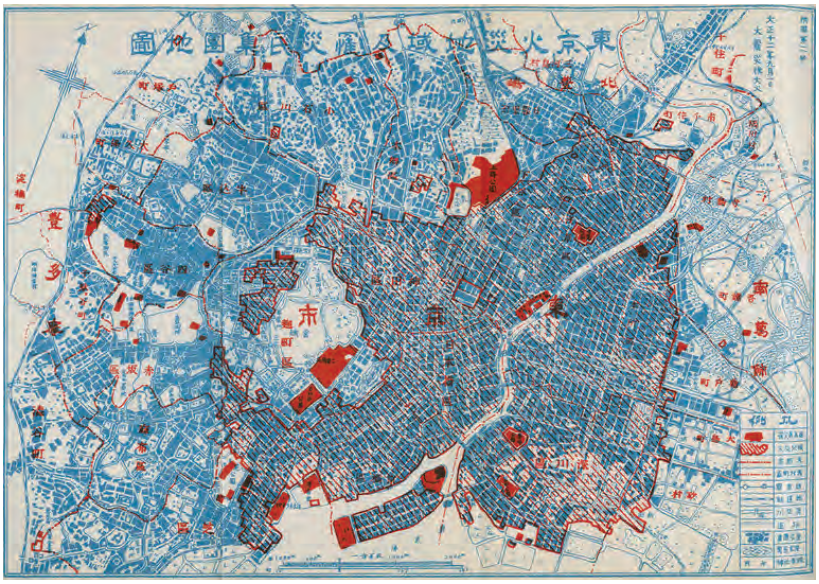


Figure 8-2. (Right) Map of the areas affected by fires after the Great Kantō Earthquake of 1923.
Source: Dai Nihon Yūbenkai Kōdansha magazine, 1923.

Figure 8-3. Image of Tokyo taken after the fire-bombings of 1945.
Source: United States Air Force (USAF).

Figure 8-4. (Right) Citizens of Seoul searching for fuel through the ruble of war-torn Seoul, 1950.
Source: Capt. F. L. Scheiber (U.S. Army official Korean War image archive), public domain.

Figure 8-5. (Below) Keum Hyewon: *'The Pond'* (2010). The photograph shows a neighborhood in Sangwangsimni (Seoul) in the process of being razed to the ground, waiting for the construction of a New Town. Digital pigment print, 70x160.

8.2 ARTIFICIAL GROUND

The idea of 'artificial ground' (*jinkō toshi*) was one of the main contributions of the Japanese Metabolist movement. It reflected an uncertain attitude towards the ground, in a country too densely populated, expensive, mountainous, flood-prone, beautiful, or seismically unstable to build upon (Koolhaas & Obrist, 2011, p. 340).

Le Corbusier's 'Sol Artificiel'

The concept was initially introduced to Japanese architects by Yoshizaka Takamasa after working at Le Corbusier's atelier in Paris in 1952 and 1953. He had become familiar with the French master's idea of *sol artificiel* (artificial ground) from his experience as a site supervisor for the Unité d'Habitation in Marseille. The artificial ground was a consequence of Le Corbusier's pivotal five points for a modern architecture, formulated in 1926 in order to develop new spatial concepts based on a series of technical innovations, in particular the use of reinforced concrete for structural purposes. The first point was the raising of the building above the ground on columns (or *pilotis*) in order to free up the ground for vehicular circulation and services in the case of individual residences, or for pedestrians and vegetation in the case of multi-family buildings. The separation of the built mass from the ground required the construction of an artificial ground, like a supporting table, upon which the building would sit[9]. Another key aspect of the construction of the Unité, originally suggested by Jean Prouvé, had been the erection of a steel framework on top of that artificial ground, like a wine bottle rack (Millais, 2017, p. 130). Individual, prefabricated apartments would then be slid into position horizontally like bottles. The role of the *sol artificiel* as an infrastructural commons of sorts that would allow individual units to be placed on top of it had been explored at a much larger scale in the Obus project for Algiers in the early 1930s. One of the features of the project was the construction of a great traffic artery connecting the city to the entire region along the coast, built as a viaduct in order to deal with the topography. The highway department would first build the viaduct at about 110m above sea level, and engineers would later construct floors or *planchers artificiels* (artificial floors) on its lower levels, to be occupied by population from the overcrowded city center[10]. The structure was meant to multiply the built-up surface of the city, accommodating up to 180,000 residents who would gradually occupy individual houses commissioned by themselves, promoting a sort of rigorous 'freedom through order' (von Moos, 2009, p. 199). In discussing Yoshizaka Takamasa's understanding of the artificial ground as the mediator between the public and the private, or between freedom and order, architectural historian Seng Kuan has written: *"the fundamental problem of modern housing design is to reconcile two opposite sets of interests: public good on the social, infrastructural level as 'collective organization' and private good on the individual, architectural level as 'individual freedom'"* (Kuan, 2013, p. 190).

Artificial Ground in the Japanese Metabolist Movement

The concept of artificial ground provided an operative model for the structuralist and systemic approaches of the emerging generation of Japanese Metabolist architects, consolidating a range of economic, socio-political and technological circumstances the post-World War II reconstruction only magnified (Kuan, 2013, p. 190). Furthermore, the phased nature of the artificial ground as an open-ended infrastructure upon which to build incrementally supported the inclusion of time into city planning. Such was the importance of the concept that the three design proposals featured in the Metabolist Manifesto, published in occasion of the 1960 World Design Conference, featured some sort of artificial ground at different scales: the floating Marine City by Kikutake Kiyonori, the 'Group Form' proposal for Shinjuku by Ōtaka Masato and Maki Fumihiko, and Kurokawa Noriaki's Agricultural City in Aichi[11]. Other pivotal artificial land projects include Maekawa Kunio's Harumi

9 See Figure 8-7.

10 See Figure 8-6.

11 See Figure 8-8.

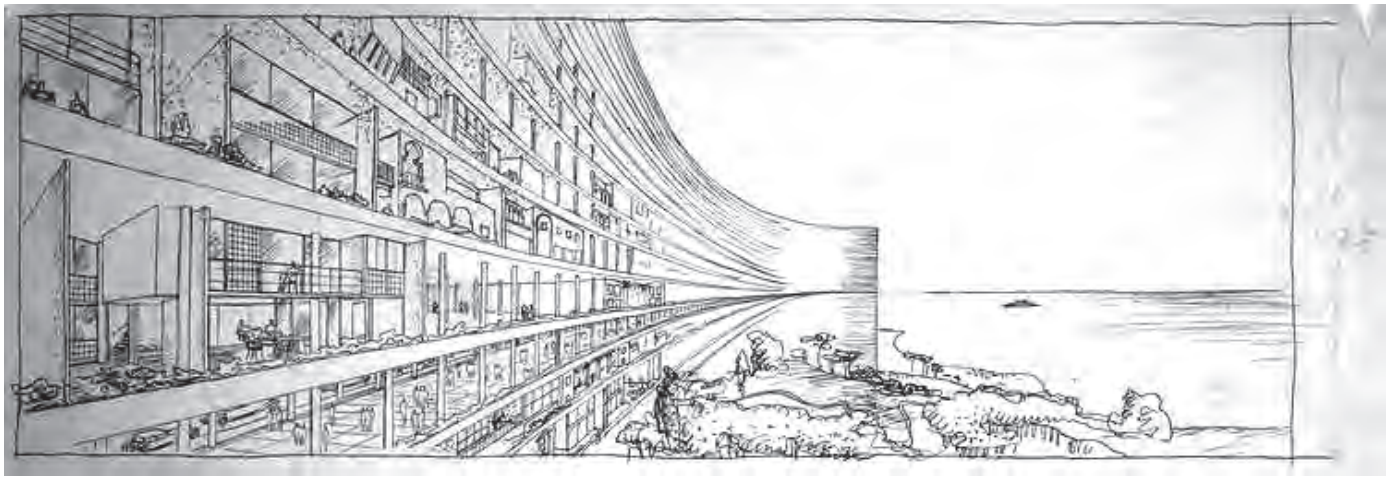


Figure 8-6. Le Corbusier, planchers artificiels, Obus Plan for Algiers (1930).
Source: Fondation Le Corbusier.

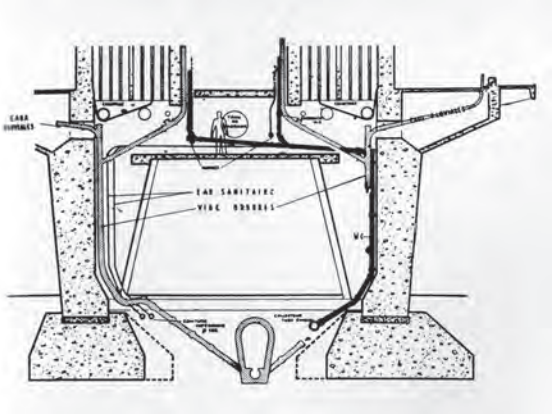


Figure 8-7. (Right) Le Corbusier, Unité d'Habitation, section of pilotis level showing piping. Source: Oeuvre complète, 1946–1952.

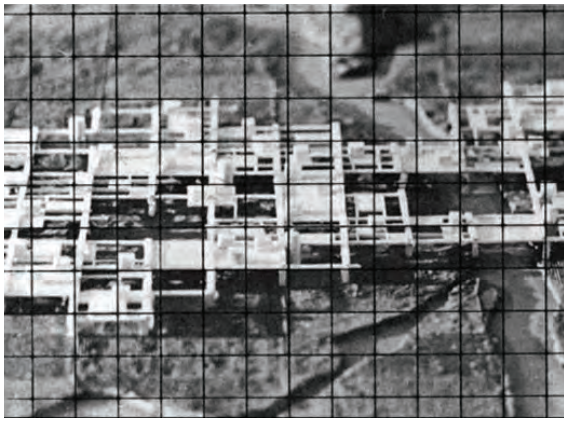


Figure 8-8. Kisho Kurokawa, Agricultural City Plan in Aichi, Japan, 1960.
Source: Kisho Kurokawa Architect & Associates.

Figure 8-9. Masato Otaka, Artificial Land Platform in Sakaide, Japan, 1968.
Source: National Archives of Modern Architecture.

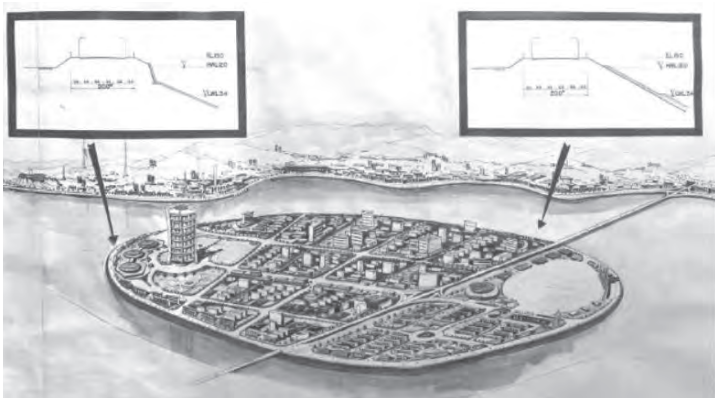


Figure 8-10. (Top) Aerial view of the Sewoon Sangga shopping complex after completion.
Source: National Archives of Korea.

Figure 8-11. (Bottom) View of the project for Yeouido as a landfill (1969).
Source: Seoul History Museum.

Apartments built on reclaimed land in Tokyo Bay (1957-58), Kiyonori Kikutake's own Sky House (1958), the different plans to inhabit Tokyo Bay by Ōtaka Masato and Okumura Keiichi (1958) and Tange Kenzo (1960), and Ōtaka Masato's Artificial Land Platform built in Sakaide[12] (1966–1985), among others.

The Artificial Ground and Modernization in South Korea

Kim Swoo-geun graduated with an M.A. in Architecture from the University of Tokyo and returned to Seoul in 1960, the same year the Metabolist manifesto was published. His comeback coincided with the beginning of the developmental regime under President Park. The architect managed to gain the favor of the regime, paving the way to an intense and successful professional career during the following decades. From his position as president of the Korea Engineering Consultants Corporation, a public company in charge of the country's development and planning, Kim led some of the most representative projects at the time, and had a long-lasting influence in giving form to the newly industrializing country in its pursuit for modernization.

In some of his projects, the idea of the artificial ground was very present, due to the similarities with the conditions that prompted the emergence of the concept in Japan: a complicated topography, the scarcity of buildable land, an overpopulated capital, and the danger of yearly floods.

One of such projects was the Sewoon Sangga (Sewoon shopping arcade), the first urban redevelopment project in Korea[13]. Mayor Kim Hyun-ok approached Kim Swoo-geun in 1966 to develop a narrow stretch of land crossing the old city from the Jongno shrine in the north all the way to the foot of the Namsan mountain to the south. Japanese authorities had cleared the 1km long by 50m wide stretch of land during World War II by in order to prevent the spread of fire through downtown. After liberation, the empty ground was occupied by an informal settlement, notorious as a prostitution spot. Mayor Kim wanted to clean up the area in order to showcase his pursuit of urban modernization. Kim Swoo-geun envisioned a longitudinal artificial ground supporting wide pedestrian promenades that crossed the traditional city above the grid of avenues, labyrinthic alleys and the Chunggyecheon stream. Workshops and commercial activities would occupy the street level below, and residential, commercial and recreational activities would be housed in the buildings above the pedestrian level, like a self-sustained linear city embodied in a megastructure. The project was compromised due to the interference of several interests and Kim eventually disclaimed it, but Sewoon Sangga still stands today as a legacy of South Korea's transition towards urban modernization.

As the president of the Korea Engineering Consultants Corporation, Kim Swoo-geun was also involved in the Han River Development Plan of 1967-69 and the Yeouido plan of 1969[14]. Creating artificial ground for development through land reclamation projects in the river basin was a common strategy on both projects, and influenced later developments such as the Jamsil New Town of 1974[15], the Mok-dong New Town of 1983[16], and others. The covering of the Cheonggyecheon stream and many of its tributaries in the city center since 1958 was a direct precedent of this practice, which spearheaded a modernist tradition of using technology to dominate and exploit nature for short-term results without concern for long-term sustainability. This practice continued to pervade the modern era with initiatives such as the Saemangeum estuary landfill project (since 1991) -one of the biggest land reclamation projects in history-, or the controversial Four Major Rivers Project ('FMRRP', 2009).

12 See Figure 8-9.
13 See Figure 8-10.
14 See Figure 8-11.
15 See '3.8 Planning of Jamsil New Town' in Chapter 3, Volume 02.
16 See '3.12 Planning of Mok-dong New Town' in Chapter 3, Volume 02.

8.3 STRATEGIES TO OPTIMIZE THE ACQUISITION OF LAND FOR MASS HOUSING

Up until the 1980s, land readjustment projects (LR) were the most widespread urban planning tool in Korea. Introduced during the Japanese colonial period, the method was used to transform groups of diverse parcels into regularized tracts, while at the same time providing land for public amenities, such as infrastructure, open space, or public buildings. The LR system benefited private owners by increasing the value of their land in spite of reducing the size of the plots, as well as the administration, which obtained land without spending public money. Since the colonial period up until the 1980s, about 18,000Ha, or 38.6% of the total urbanized area of municipal Seoul was affected by land readjustment projects[17]. Nevertheless, the system had its limitations: since it relied on land subdivision in order to improve the efficiency of land use, it was not fit for the implementation of long-term plans and it was very limited in securing significant amounts of public space, besides that for roads (I. Jung, 2013, p. 19). Furthermore, since land value in LR project areas increased rapidly, the method became a tool for land speculation and a source of social problems. Development of those areas progressed very slowly, as owners waited for their land value to increase. Finally, the system did not allow the government to gain economic profit from development (Kim, 2013, p. 135). In order to optimize the redistribution of land in LR projects, standard layouts of urban blocks were outlined, establishing ideal block dimensions in relationship to different hierarchies of streets. Default urban layouts were orthogonal grids in order to facilitate the calculation of land rates.

In order to streamline land development in order to provide more housing and to allow the government to profit from it, the Housing Site Development Promotion Act (HSDPA) was passed in 1980. The Act facilitated the public provision of mass housing through the Housing Site Development system (HSD), in four basic steps: the purchase of extensive tracks of land, the development of residential properties, the construction of residential buildings, and the sale of housing units to individuals. It also allowed the sale of developed land to private developers. It was administered by semi-public institutions such as the Korea Land Corporation (KLC) and the Korea National Housing Corporation (KNHC). The development of Godeok, Sanggye, Junggye, Gaepo, Yangjae, Suseo, Sinnae, Mok-dong and the five satellite towns in the metro area under the 'Two Million Housing Construction Plan' (주택 200만 호 건설 정책) was carried out through this system[18] (Kim, 2013, pp. 135-136).

17 See Figure 8-12.

18 See Figure 8-13.

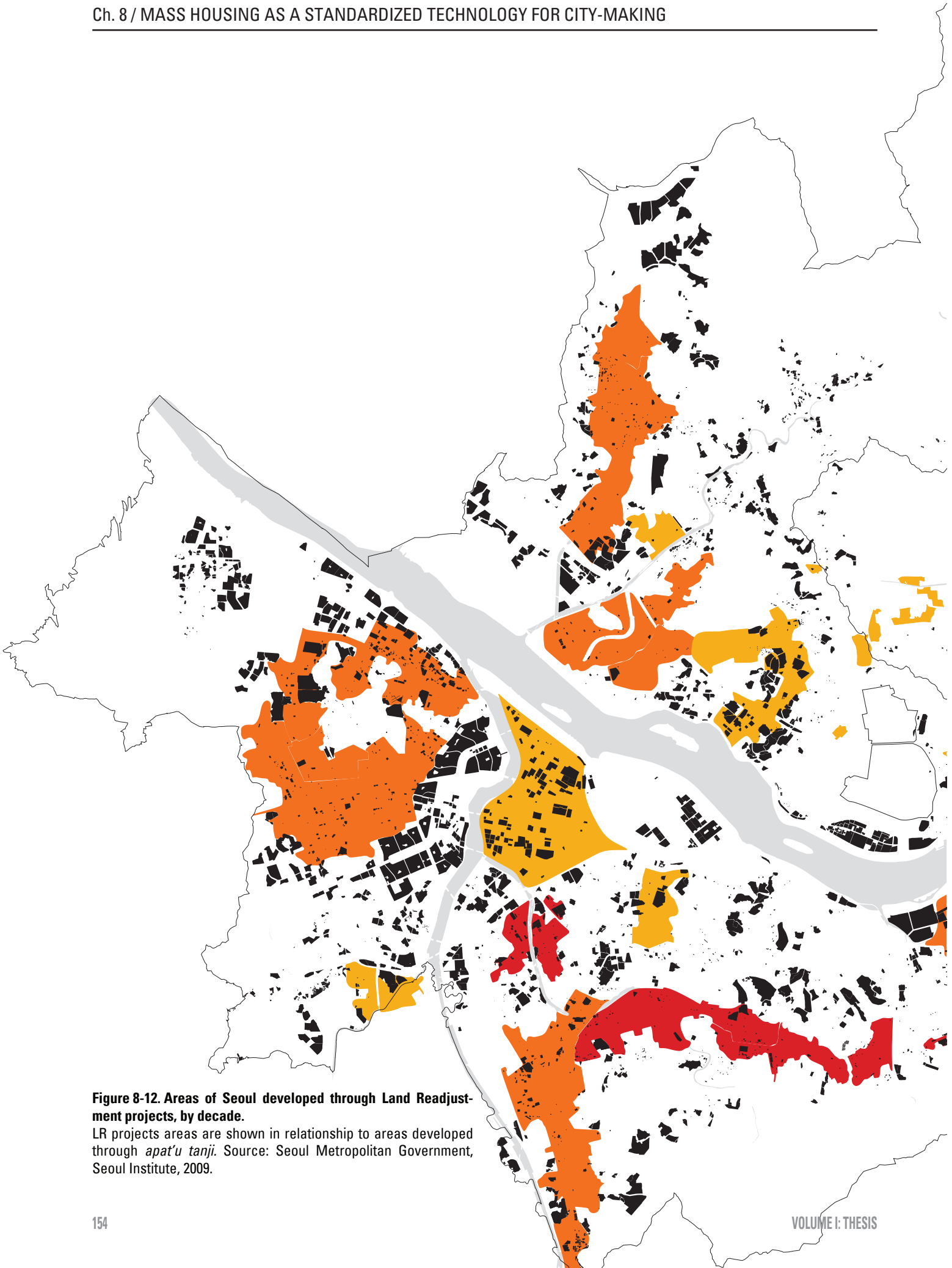


Figure 8-12. Areas of Seoul developed through Land Readjustment projects, by decade.
LR projects areas are shown in relationship to areas developed through *apat'u tanji.* Source: Seoul Metropolitan Government, Seoul Institute, 2009.


Before 1960
1960s
1970s
1980s
e. 1/100,000
0
2.5
5
10 Km

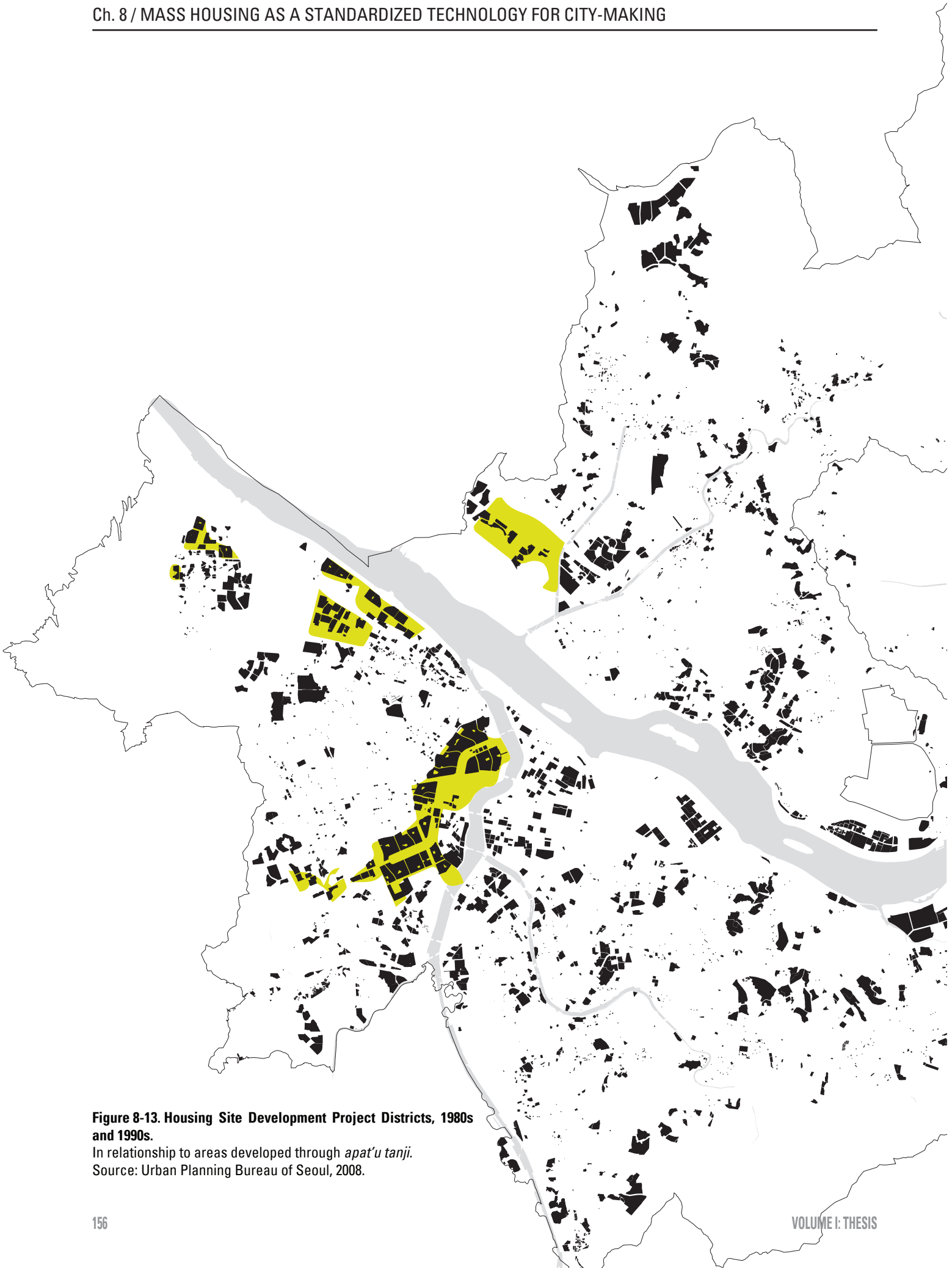


Figure 8-13. Housing Site Development Project Districts, 1980s and 1990s.
In relationship to areas developed through *apat'u tanji.*
Source: Urban Planning Bureau of Seoul, 2008.


1980s & 1990s
e. 1/100,000
0
2.5
5
10 Km

8.4 STREET GRIDS AS FRAMEWORKS FOR URBAN DEVELOPMENT

Street grids are an ancient idea that has been related to cities since their remote origins, usually as the physical expression of a central power. They allowed the rationalization of city making through the establishment of standards, and have become the ultimate expression of urbanity, transcending time and geography in order to *"combat everything from pollution to inflexibility"* (WORK Architecture Company, 2009, p. 15). As a formal strategy, they brought together the three operations that define the urban project mentioned at the beginning of the Section[19]: the distribution of land, the layout of infrastructure and public space, and the framework for the construction of buildings over time. This potential to streamline the urbanization process made them particularly useful in expansive civilizations such as Rome or ancient China, whose urban principles can still be traced today[20]. James C. Scott has described the advantages of the military logic found in grids based on the Roman *castra* in the following way: *"Soldiers can easily learn the techniques of building it; the commander of the troops knows exactly in which disposition his subalterns and various troops lie; and any Roman messenger or officer who arrives at the camp will know where to find the officer he seeks. […] the city laid out according to a simple, repetitive logic will be easiest to administer and to police"* (Scott, 1998, p. 55).

Street Grids in Colonial Urbanism

Due to the degree of rationalization, uniformization and efficiency they make possible, grids have been a staple of colonial urbanism. The *'Leyes de Indias'* (*Laws of the Indies*) were a body of laws issued by the Spanish kingdom to regulate all aspects of life in its colonial territories in America and the Philippines. Since the 16th century and over 400 years, the laws were revised and compiled several times, especially under the reign of Carlos V and Felipe II. Book IV of the 1680 compilation included all matters regarding urban planning: the choice of sites for settlement, the form of the street layout, the location of public spaces and common buildings, the provision for commons and future growth, etc. In his book *'The Making of Urban America'*, John W. Reps defines the *Leyes* as a *"unique combination of town planning doctrines and prescribed practices"* (Reps, 1992, p. 32). The author goes on to explain how they drew from both theoretical treatises such as those of Vitruvius (rediscovered at the beginning of the 15th century), Alberti, and emerging theories on military encampment; as well as from actual examples of city planning such as Roman colonial cities, medieval monastic architecture, and urban extension and reconstruction projects from Renaissance Italy. As such, the *'Leyes de Indias'* have been considered one of the most important documents in the history of urban development (Reps, 1992, p. 30). The gridiron street pattern was the main spatial feature of Spanish colonial urbanism as codified in the *Leyes*[21].

Modern urbanism since the 19th century brought a renewed interest in the organizational power of street grids, due to hygienist concerns and the focus on efficiency, but also in connection to modern statecraft. The grid allowed for the rationalization of the industrial city and became the expression of modern urbanism in such different contexts as Berlin, Barcelona, Milan, New York, and Shanghai. In describing the role of grids in the spatial aspirations of modern statecraft, Scott wrote *"…the exacting state official may aspire to a perfectly legible population with registered, unique names and addresses keyed to grid settlements; who pursue single, identifiable occupations; and all of whose transactions are documented according to the designated formula in the official language. […] The aspiration to such uniformity and order alerts us to the fact that modern statecraft is largely a project of internal colonization, often glossed, as it is in imperial rhetoric, as a 'civilizing mission'. The builders of the modern nation-state do not merely prescribe, observe and map; they strive to shape a people and landscape that will fit their techniques of observation"* (Scott, 1998, p. 83).

19 See introduction to Section 2 / City Scale.
20 See Figure 8-14.
21 See Figure 8-15.

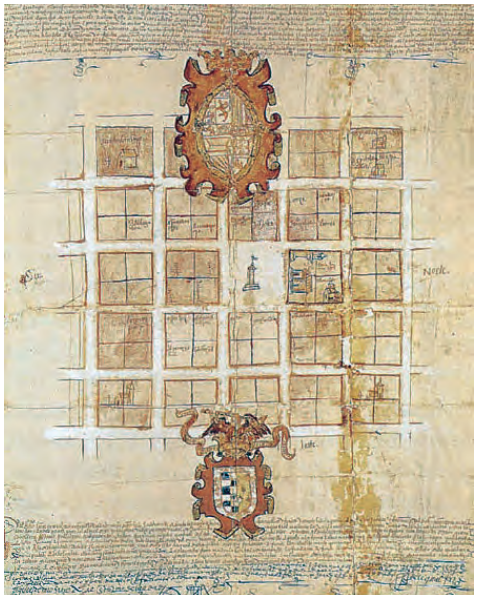
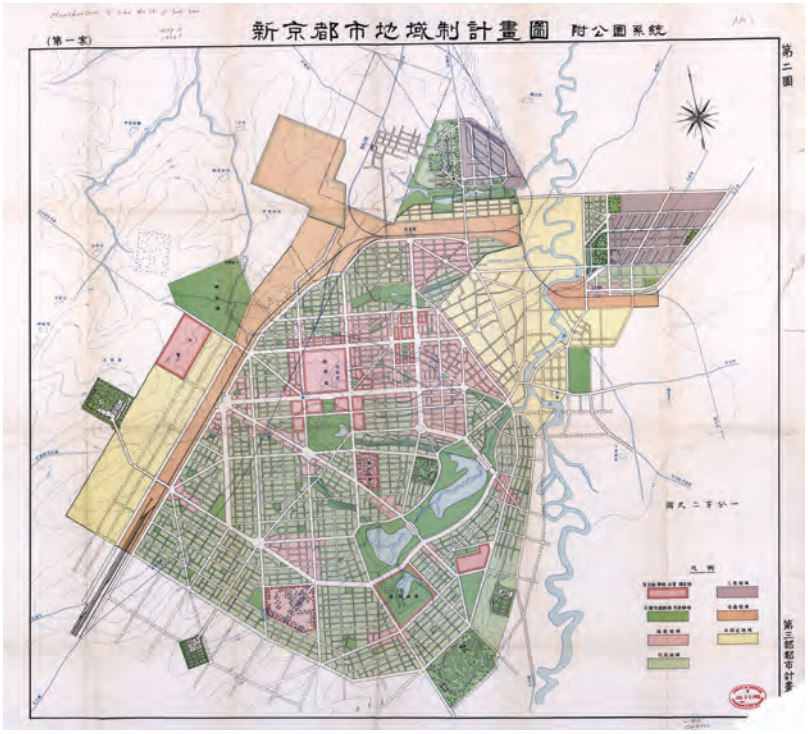


Figure 8-14. (Top left) Plan of the Roman city of Timgad in the 3rd century.
The city was founded as a military settlement around 100AD. Source: Frederik Pöll / Wikimedia Commons / Attribution-ShareAlike 3.0 Unported.

Figure 8-15. (Bottom left) Plan of the city of San Juan de la Frontera, Argentina, 1562.
Source: General Archive of the Indies, Sevilla, Spain.

Figure 8-16. (Top right) Plan for the reconstruction of Tokyo based on street grids, in the aftermath of the 1923 Great Kanto earthquake.
Source: Tokyo Municipal Office, 1930.

Figure 8-17. (Bottom right) Planning map of Changchun, Capital of Manchuria, 1932.
Source: Public domain.



A particular aspect of modern urbanism was the development of colonial planning since the beginning of the twentieth century. Street grids, again, played an important role in it. In her 1965 description of the city of Cairo, American sociologist Janet Abu-Lughod defined the concept of 'dual cities' as one of the most distinctive features of colonial urbanism. She wrote that the colonial city was not *"a single, unified city but, in fact, two quite different cities, physically juxtaposed but architecturally and socially distinct"*. This morphological duality was a consequence of cultural pluralism and the concentration of power in the hands of a non-indigenous minority, resulting in a city based on indigenous traditions, ways of life and architectural methods becoming subordinated to the new, westernizing city imposed by colonization (Abu-Lughod, 1971). The contrast between colonial gridiron street layouts and subjacent vernacular fabrics was an evidence of modernization and westernization, as much as it symbolized the advent of imperialist power[22].

Japanese Colonial Planning in Manchuria

Colonial adventures were not exclusive to European powers, though. The Japanese imperial project in Asia not only provided an opportunity to test solutions that could be used later in the metropolis, but also for the development of a distinct non-western modern urbanism. The South Manchuria Railway Company (*Mantetsu*) developed a standardized method based on scientific urban management for the construction of cities around its stations in Manchuria during the first decade of the century, based on gridded street layouts. A paradigmatic case was the planning of Changchun, a strategic node in northeast China due to its central location and its rail connection to Korean ports and shipping lanes to Japan. Since 1906, the site was treated as a *tabula rasa* where modern planning concepts would provide an urban colonial model alternative to the congestion of Tokyo's alleyways. Japanese technocrats applied the same principles in the creation of new cities in Korea, such as in Jinhae or in the Japanese settlement in Pyeongyang (I. Jung, 2013, pp. 8-9).

In 1932, Japan formally invaded Manchuria. The need to provide housing for Japanese settlers became a unique chance to plan at a scale unthinkable in the metropolis[23]. The teams of architects and planners involved used the expertise developed in the reconstruction of Tokyo after the great Kanto earthquake ten years prior[24]. After World War II, they would become the first generation of the Metabolist movement. In their proposals, grids became again the formal strategy to conquer the vast expanse of the East Asian hinterland.

The Gridiron and the Modernization of Seoul

In spite of being based largely on Chinese traditional planning principles, Seoul's street network did not follow a gridiron pattern[25]. The foundation of Seoul dates back to the late fourteenth century, when King Taejo established Hanyang (한양; 漢陽) as the capital of the newly founded Joseon dynasty in 1395. The location and layout of the walled city was based on a combination of traditional geomantic principles and Chinese urban precepts. Nevertheless, due to the topography and the presence of a complex hydrological system, the internal layout of the city lacked the regularity of its Chinese models. Thus, Hanyang did not follow a gridiron structure, and instead adapted itself organically to the natural terrain. The formal definition of the city was given by the perimeter of the city wall that followed the natural topography, encircling a valley corresponding with the watershed of the Chunggyecheon stream[26]. The wall had four main gates facing the cardinal points, and eight secondary gates. These gates, in turn, defined the origins of the main urban thoroughfares of the city: Jongno-ro connected the eastern gate (Heunginjimun or Dongdaemun, 흥인지문 or 동대문) and the western gate and became the main commercial spine. The two main N/S avenues were Sejong-ro, connecting the southern gate (Sungnyemun or Namdaemun, 숭례문) to Jongno-ro, and a ceremonial avenue in front of the main palace, Gwanghwamun Square (광화문광장). The Chunggyecheon stream defined a central

22 See Figure 8-24.

23 See Figure 8-17.
24 See Figure 8-16.
25 See '5.1 the Chinese Urban Model' in Chapter 5, Volume 02.
26 See Figure 8-18.

spine that run through the middle of the city as another important infrastructural reference, parallel to Jongno-ro to the south[27]. Beyond the closed precincts of the palaces, the rest of the city was largely made up of unplanned, homogeneous fabrics composed of one-storey wooden structures articulated along meandering alleys that followed the topography and the streams. Besides providing a space for circulation, alleyways were also the main form of public space and defined tight communities based on proximity and everyday interactions.

At the end of the 19th century, a series of drastic events initiated the process of modernization of Korea. Mainly, the Kanghwa Treaty of 1876 (강화도 조약), which forced Korea to finish its isolationism and to open up to foreign trade; and the Gabo Reforms (갑오 개혁) introduced by the government between 1894 and 1896 in response to the Donghak Peasant Revolution (동학 농민 혁명). These changes prompted the proclamation of the Great Korean Empire (대한제국) and opened a brief period of modernization orchestrated by the government, known as the Gwangmu Reform (광무개혁). The reform pushed for the modernization of the military, economy, land system, education system and various industries in a similar way as the Meiji restoration had in Japan. Together with the process of modernization, Western planning practices were also introduced to Korea (J.-m. Sohn, 2003, p. 434). In between 1896 and 1910 an ambitious program to expand existing roads and to build new ones inside and outside the city walls was undertaken, especially around the area of the Deoksugung Palace (덕수궁) and Namdaemun Gate in order to remove parts of the city wall and facilitate access to Namdaemun Station - today's Seoul Station[28] (J.-m. Sohn, 2003, p. 441) .

The program of road improvement continued under the Japanese rule established in 1910. In 1912, the colonial government announced a plan to improve the capital's street network, following the Tokyo City Ward Improvement Ordinance of 1888. Once the system had been perfected in the metropolis, it was exported to the colonies (I. Jung, 2013, pp. 9-10). The aim of the colonial government plan was to transform Seoul's closed street network into a regular, open system. This required the opening of new avenues through the traditional fabric of Seoul and the tearing down of sections of the city wall, especially around Namdaemun Gate, in order to make way for the new avenues and to facilitate the opening of the old city to Japanese colonial and commercial interests[29] (I. Jung, 2013, p. 7). Due to their colonial underpinnings, the city ward improvements introduced by the Japanese were never part of a comprehensive urban improvement plan such as Haussmann's renovation of Paris or the original city ward improvement of Tokyo. Their goal was the enhancement of traditional contexts through the provision of urban infrastructure, rather than on the comprehensive organization of overall land use. They focused on the improvement of road infrastructure in order to make urban space identifiable and controllable, rather than on solving problems due to increasing overcrowding. The program was divided into two phases, from 1912 to 1918 and from 1919 to 1929. The objective was to expand and straighten streets in the downtown area, following Haussmann's street plan for Paris in order to prevent possible revolts by the independence movement (J.-m. Sohn, 2003, p. 449). In total, the program affected about twenty-one kilometers in forty-four different streets[30].

The turn of the 1930s brought significant changes to the peninsula. With the invasion of Manchuria in 1931, Korea's geostrategic importance within the Imperial project increased. The colonial powers set out to transform the peninsula into a threshold for the long-term control of the continent, thus it had to become an infrastructural hub and a source of industrial resources for Japan's war machine. This led to an economic boom and to a demographic explosion, as urban population throughout the peninsula increased up to a 250% during the decade (I. Jung, 2013, p. 16). In order to respond to those changes, urban areas were increased and the Urban District Plan Decree was

27 See Figure 4-1 in Chapter 4,Volume 02.
28 See Figure 8-19.
29 See Figure 8-21.
30 See Figure 8-20.

passed in 1934 in order to allow for the development of suburban areas. The law was based on two strategies: zoning systems and land readjustment projects. The street systems created during the Japanese colonial period became formative influences in later urban developments[31] (I. Jung, 2013, p. 4).

Grids in Seoul During the Developmental Period

The construction of housing estates in Seoul during the period of study was closely linked to the layout of new urban grids, as the sequence of maps showing the development of mass housing estates in Seoul demonstrates[32]. The first deployment in earnest took place in 1971 in Yeouido, as an alternative to Kim Swoo-geun's original design. The street grid in Yeouido obeyed two functional purposes: on one hand, it facilitated vehicular circulation; and on the other, it provided the convenient subdivision of parcels so they could be sold to individual developers, ensuring the financial feasibility of the project. The precedent of Yeouido established the double role of the street grid in Seoul. Besides these functional purposes, Yeouido's street gridiron also had a highly symbolic role in formalizing the urban appearance that embodied the modern aspirations of new regime, to the point that the island was dubbed 'Mini Manhattan'.

The planning of Gangnam through the Yeongdong Land Readjustment Project built upon the expertise gained from Yeouido. Mayor Kim Hyun-ok, at General Park's instance, went on a tour of western cities prior to the planning process. He became particularly impressed by the orderly arrangement of Manhattan, and developed a particular liking to street infrastructure as the driver of urban development. A famous quote from him at the time reads: *"New York is the city of good, and the line is art"* ('뉴욕은 선의 도시야, 선이 곧 예술이라고').

A glance at Seoul's road network[33] reveals a polarized urban structure. On one hand there are regular street layouts, and on the other organic road networks adapted to the topography. Urban grids in Seoul are the not the product of a unified project, but the accumulation of different planning efforts over time. We find the grid of avenues juxtaposed over the traditional fabrics within the city walls by the Japanese colonial authorities during the 1920s; suburban grids to expand the city beyond its walls during the 1930s; and the diverse grids that supported the urban explosion during the developmental period. There is little relationship among them, and each one acts as a fragment with its own identity. The antagonism between the organic city and the regular city has taken root in the public imagination through an oversimplified opposition between the traditional, chaotic, poor, unhealthy urban past and the aspiration for a modern, orderly, rich, hygienic future, embodied by the duality Gangbuk (north of the Han River) – Gangnam (south of the Han River)[34]. This urban dualism is a testament of both the colonial dual city and of the top-down modernizing project of the developmental regime as an internal colonization.

The implementation of street grids as a strategy for the management of urban growth was not uniquely tied to mass housing, reflecting the hesitant attitude of the administration towards the typology, as seen in the evolution of mass housing in relationship to infrastructure[35]. The first gridiron-based urban expansion projects, such as Yeouido and Gangnam, were meant to support different uses and building types[36]. While Jamsil was planned in a more holistic fashion, it still encompassed different residential densities and typologies from the outset. After 1980 with the adoption of mass housing in earnest, projects of urban growth were almost exclusively based on mass housing, as reflected in the new towns of Gwacheon, Mok-dong and Sanggye. Once land within the boundary of Seoul became scarce, similar strategies were applied in the planning of the satellite cities.

31 See Figure 8-23.
32 See from Figure 4-3 to Figure 4-8 in Chapter 4, Volume 02.
33 See Figure 6-1 in Chapter 6, Volume 02.
34 See Figure 5-7 in Chapter 5, Volume 01.
35 See from Figure 4-3 to Figure 4-8 in Chapter 4, Volume 02.
36 See Figure 8-27.

Figure 8-18. (Top) Map of Seoul during the Choseon dinasty (도성전도, 1848).
The city is depicted as an overlapping of two networks: the street system (in red) and the hydrological system (in blue). Image: Seoul History Museum.

Figure 8-19. (Above) American electric trolley at Namdaemun (1903).
A treaty signed in 1882 between Korea and the USA, under King Kojong's reign, spearheaded the implementation of modern facilities in the city. Image: Herbert G. Pointing.

Figure 8-20. (Right) Map of Gyeongsong (Seoul) under the Japanese colonial administration (1928). The map highlights the improved transportations: avenues and railways. Source unknown.

Figure 8-21. (Below) Tour Map of Seoul (경성유람안내도 - 京城遊覽案內圖, circa 1928).
The map depicts with accuracy the sites and features of the city at the time. It also highlights the tram network along the improved street grid, the train infrastructure and the extension of the city beyond its traditional walls towards the Han river along them.Image: Seoul History Museum.

The features of Seoul's urban grids are very diverse. Even though the layout of a street grid may seem limited to the plan in a bi-dimensional way, complementary regulations about uses, building height and parcel occupation through ordinances define the three-dimensional characteristics of the different fabrics and thus their identity. The orientation of the grids, the shape and dimensions of the blocks, the proportion between the width and the height of road sections, all contribute as well to the configuration of urban space and have a direct incidence on the grid's possibilities for transformation.

Street gridirons are powerful organizational tools capable of asserting their influence over time. The grids of Seoul –especially the earlier ones- have supported densifications of the urban fabric that redefined the original project. In occasions, the extent of the modifications has been in detriment of the original grid, to the point of rendering it obsolete.

8.5 THE URBAN BLOCK AS A UNIT OF DEVELOPMENT

Blocks are intrinsically complementary to the space dedicated to the street network and define areas for private residential and productive activities, as well as for services (Busquets & Corominas, 2009, p. 20). While focusing on the street network places the accent on the public infrastructure of access and the distribution of services, looking at the block places the accent on the system for the (mostly) private occupation of land by buildings (Solà-Morales, 1997, p. 134). Since the basic choice of the dimensions of a block and the streets surrounding it has direct implications on issues such as land use, parking, circulation flows, open space and others, urban blocks are a basic strategy for the standardization of city making. Furthermore, the definition of blocks can be used to introduce the time variable in urban planning, as in spite of their fixed dimensions, they may accommodate changes in zoning and building typology over time.

As we have seen in the previous section, the process of modernization of Seoul by slicing through the traditional fabric in order to optimize transportation and to increase control over the colonized population implied the juxtaposition of a new grid of wide avenues onto the vernacular network of alleyways. The resulting formation of blocks and the juxtaposition of the two urban structures is an example of the phenomenon of 'dual cities' characteristic of colonial cities, as explained by sociologist Abu-Lughod in her description of Cairo and is still present nowadays[37]. In Seoul, the modernization of the urban structure brought a 'block-ification' of traditional, unplanned fabrics.

37 See '14.4 Street Grids as Frameworks for Urban Development', previously in this chapter.

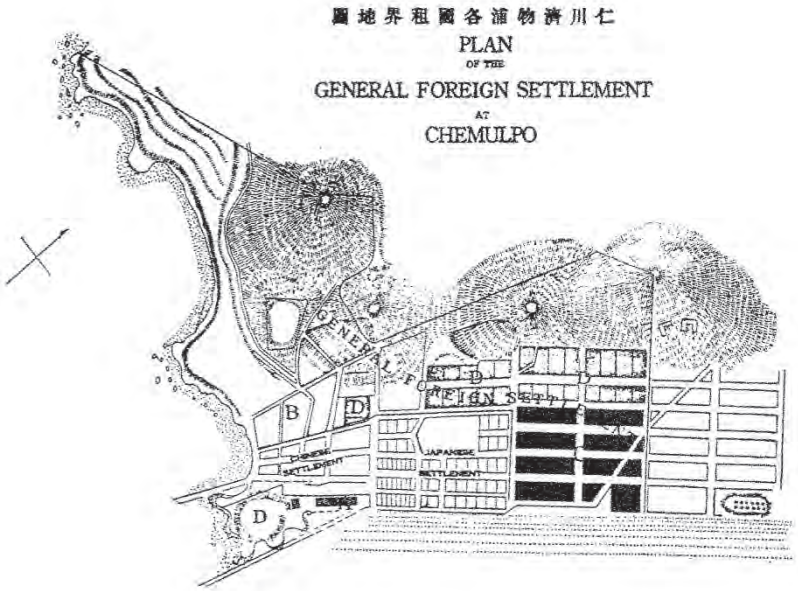


Figure 8-22. (Top) Plan of the foreign concessions in the open port of Chemulpo (present day Incheon), late 19th century.
Source: National Archives of Korea.

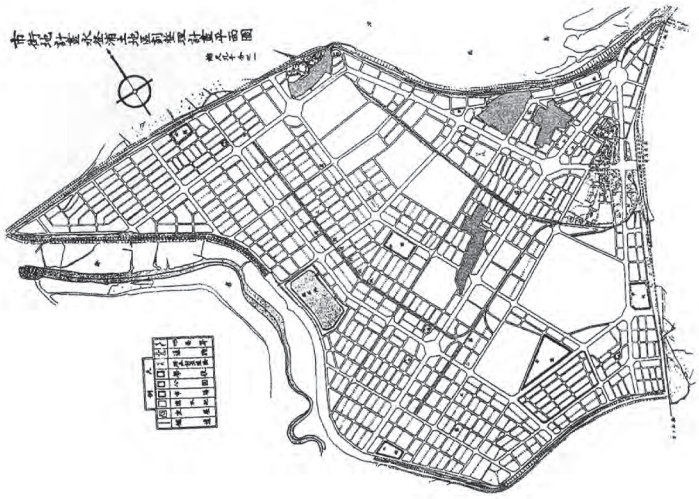
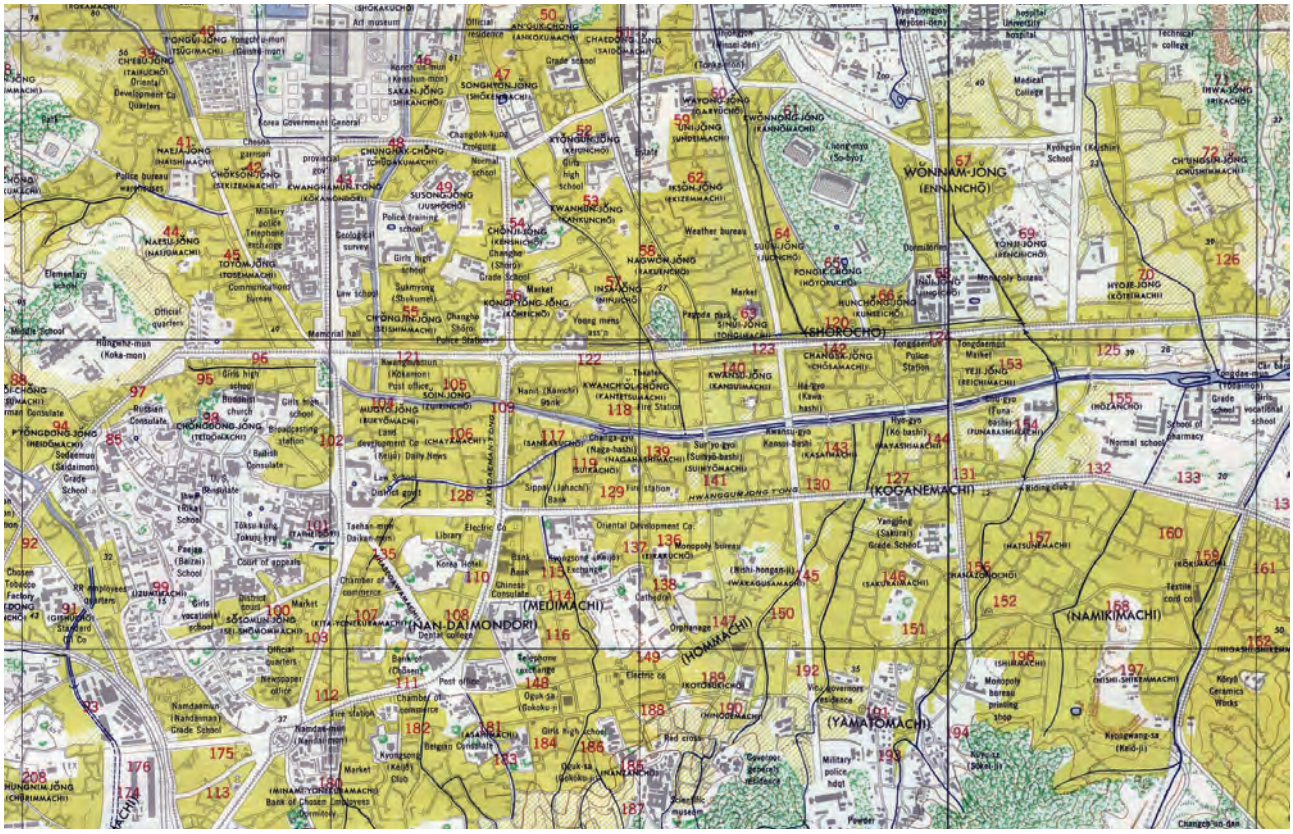


Figure 8-23. (Middle) First land readjustment plan for the district of Yeongdeungpo, Seoul, 1937.
Source: National Archives of Korea.

Figure 8-24. (Bottom) Map of downtown Seoul showing the double street structure after colonial rule.
The orthogonal network of avenues resulting from different road improvement projects between the end of the 19th century until the 1930s defined superblocks within which the traditional, organic fabrics remained.
Source: U.S. Map Service,1946.



Introduction of Urban Blocks through the Planning of Open Ports in the Late 19Th Century

The first wave of modern urbanization in Korea took place after 1876, when under the pressure from Japan, Korea signed commercial treaties with foreign countries. Those treaties included the lease of land to support diplomatic and trading activities in ten new open ports spread across the peninsula, through the system of foreign concessions developed earlier in China and Japan for similar purposes.

Incheon (then called 'Chemulpo') was the third treaty port to open, in 1883. The planning of its Japanese Concession became the model for the other concessions and for later similar settlements[38]. It consisted of rows of rectangular blocks 120m. long and between 20 and 30m. wide, located parallel to the shore and served by 12-meter wide streets. These block dimensions and the way to partition them was based on a common street grid found in Tokyo, called *jô-bô* system (*jô*: row; *bô*: column), inherited from Chinese traditional urban planning (I. Jung, 2013, p. 5). After the first three ports, the Korean government unilaterally opened the remaining ones, under pressure from the Japanese authorities, who were eager to consolidate their control and exploitation of the peninsula. The administration subdivided the lots and sold them at public auctions. This meant that layouts had to be based on facilitating the sale rather than on other planning considerations, and this practical approach to planning became a strong precedent for the developmental period. Block sizes were determined by lot sizes, which were fixed in order to maintain consistency in the public auctions. In the port of Mokpo (1897) there were two block sizes: either 60m by 80m or 90m by 90m. In Gunsan (1899), they were 40m by 60m. All these blocks could be divided in four equal parts easily in order to be rented out (I. Jung, 2013, p. 6).

38 See Figure 8-22.

Street Improvement Projects in Downtown Seoul at the Turn of the Century

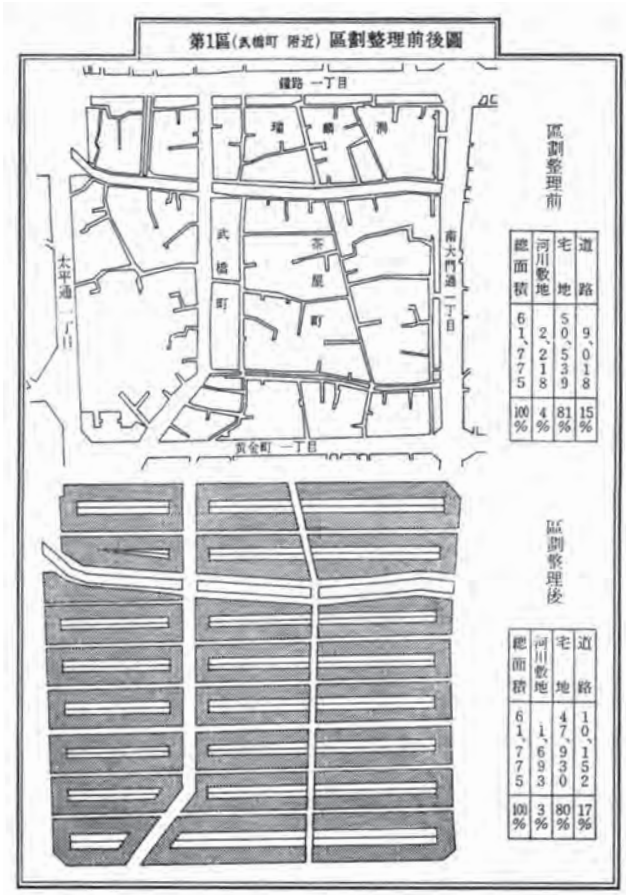
The modernization of downtown Seoul at the end of the 19th century and first decades of the twentieth, either by the late Korean emperor or under Japanese rule, focused on improving existing urban fabrics rather than on developing new areas. As seen in the previous section, the rationalization of the unplanned fabrics of the traditional city with new avenues based on the Tokyo City Ward improvements and in Haussmann's renovation of Paris introduced a process of 'block-ification' based on a grid of near 200m by 300m[39] (I. Jung, 2013, p. 11).

The distance between the two main E/W avenues in the old city, Jongno and Euljiro, was around 415m., which was very close to the dimension of a village or an urban block in the Chinese tradition, the *li* [40].

Suburban Development and Land Readjustment Projects in the 1930S

As mentioned earlier, the Japanese invasion of Manchuria in 1931 further accentuated the geopolitical importance of Korea within the Japanese Empire. Besides acting as the main gateway into the continent, the peninsula also had to support the colonial military machine by providing rice and heavy equipment. This meant the transformation from a rice-centered agriculture to heavy industry, which in turn lead to an economic boom and to an incipient urbanization, as population was drawn to urban centers. Through the 1930s, the population of twenty cities in Korea increased by 250%, which was translated in housing shortages, lack of urban infrastructures and uncontrolled growth in the fringes of the city. The Government General of Joseon responded with the Urban District Plan Decree of 1934, which established a legal framework for the development of suburban areas, and an expansion of the boundaries of Seoul in 1936. The decree was based on the scientific analysis of urban realities and needs, and in predictions for future growth. The introduction of two modern

39 See Figure 8-25.
40 See Figure 5-1 in Chapter 5, Volume 02.



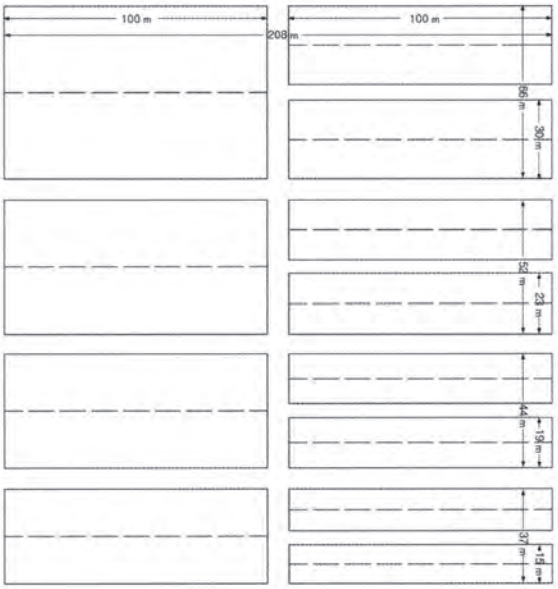


Figure 8-25. (Top) Proposed land readjustment plan for the central district of Keijo (name given to Seoul under Japanese colonial rule), 1928.
The top drawing shows the original blocks, and the bottom the planned ones. Source: *The Report of the City Planning of Keijo*, 1928.

Figure 8-27. (Bottom) Development Plan for Yeouido, 1971.
Source: Seoul Metropolitan Government.

Figure 8-26. (Top) Block parcellation standard drawing, 1937.
Redrawn by Jung Inha for his book *'Architecture and Urbanism in Modern Korea'* (2013).

Figure 8-28. (Bottom) Overall plan for the district of Sanggye, 1980s.
Source: Kang Hong-bin (planner), Seoul Metropolitan Government.

planning methods, namely zoning systems and land readjustment plans, brought a change of paradigm from the linear planning along streets of the City Ward improvements to the planning of complete areas (I. Jung, 2013, p. 16).

Land readjustment plans became very popular in Korea since they did not require state expenditure. Up to 23.4% of newly urbanized areas since the 1970s were developed through the method (I. Jung, 2013, p. 19). The system produced a particular urban pattern, as throughout the peninsula the partitioning of parcels had to follow the Block Parcellation Standard Drawing, an official template to facilitate the calculation of the reduced area in land readjustment projects based on Japanese guidelines (I. Jung, 2013, p. 20). By default, blocks were rectangular and defined by a gridded street pattern. The lengths of residential block were standardized to 100m, with diverse widths: 16, 19, 23, 30, 37, 44, 52 and 66m. The drawing also contemplated roads of either 6 or 8m wide[41] (I. Jung, 2013, p. 19). Typically, twenty-four of these residential blocks (or *kaikaku* in Japanese) would form a larger block of about 370 by 265m, surrounded by wider arterial roads.

Urban Blocks During the Developmental Period

The first grid planned during the developmental period was the one in Yeouido (1969), which granted the island the nickname of 'Mini-Manhattan'[42]. The landfill in Icheon-dong had been planned earlier, but the irregular linear development constrained between the edge of the US military base and the edge of the river cannot be considered a grid properly. The street grid of Yeouido was adopted as an alternative to Kim Swoo-geun's utopian proposal, in order to ensure the feasibility of the development. Thus, as in the earlier open ports at the end of the 19th century, the dimensions and subdivision of the blocks were geared towards facilitating their sale to private developers (I. Jung, 2013, p. 55). The blocks of Yeouido are roughly 450m long by 290m wide, not too different from those of the Yeongdongpo district nearby, developed through land readjustment projects under the Japanese administration[43].

The planning of Gangnam (1968-1971) introduced a radical change of the scale of the blocks, which at an average size of 600m, reached the status of 'super-blocks'[44]. There are different speculations about the reason for this dimension. A symbolic explanation argues the module was derived from the distance between the front gate of Gyeongbokgung, (the main palace) all the way down on Gwanghwamun square until its crossing with Jongno, an important E/W medieval thoroughfare. Another interpretation refers to the blocks proposed by Park Byung-joo in his New Seoul Plan of 1966, strongly influenced by Le Corbusier's Ville Radieuse (I. Jung, 2013, pp. 56-57)[45]. As a reference, the blocks of Cerdà's Barcelona Eixample are 113 by 113m, and the standard ones in Manhattan, 80 by 270m. The magnitude of the blocks in Gangnam has produced a distinct urban landscape over time, based on two features: they have been divided internally into smaller, irregular patterns; and there is a strong contrast between the edge and the interior of the block, due to differences in zoning, real estate value and building typologies. Furthermore, there was little provision of open space within the superblocks, and the sheer dimensions of the blocks and the avenues surrounding them hindered pedestrian circulations from one block to the next.

The blocks of Jamsil (1974) aimed at improving upon some of the shortcomings of those from Gangnam, especially the chaotic appearance due to the mix of uses and building types within the super blocks, and their internal subdivisions[46]. This was possible because one single architect coordinated the whole design process, Park Byung-joo. He adopted Clarence Perry's neighborhood unit theory to the higher density required in Seoul. The theory was based on defining the ideal size for a neighborhood according to the

41 See Figure 8-26.
42 See Figure 8-27.
43 See Figure 8-23.
44 See Figure 3-17 in Chapter 3, Volume 02.
45 See Figure 3-1 in Chapter 3, Volume 02.
46 See Figure 3-32 in Chapter 3, Volume 02.

population needed to sustain one elementary school. Once a minimum threshold of residents was defined, related issues of scale, boundaries, open space, institutions, shops, and internal street structure could be addressed accordingly. Following the original theory, the maximum distance for a child to walk to school was set at 400m (a quarter mile approximately), or five minutes. The population of a neighborhood unit was estimated between 1,000 to 3,000 households, and the dimensions of blocks were set between 500 and 800m (I. Jung, 2013, pp. 60-61). These planning guidelines for Jamsil would became the basis for the regulation of districts for mass housing within the Promotion of Housing Construction Act of 1977.

One of the main limitations of the planning of Jamsil was that the strict implementation of the neighborhood unit produced self-contained, non-hierarchical and repetitive clusters of housing units and their amenities, but did not include any indication as to the type of urban structure they were to fit in. This lead to the adoption of the system of 'living zones' (생활권, *saenghwalgon*), a generative framework structured in three levels capable of addressing the planning of a range of scales, from the level of a simple neighborhood to that of a large metropolis. In conjunction with the neighborhood unit, the system organized land use, circulation systems and distribution of amenities in an open-ended way (I. Jung, 2013, p. 65). The system was first used in the planning of the Gwacheon new town outside Seoul in 1981[47], and perfected in the planning of the new town of Mok-dong in 1983[48]. Based on the linear central spine that responded to the elongated shape of the site, Mok-dong was planned as a medium-sized living zone for 120,000 residents in 25,000 households, distributed in three small living zones, six neighborhood units and twenty sub-units[49]. A variety of amenities according to the different hierarchies was provided (I. Jung, 2013, p. 66). The resulting blocks are quite irregular due to the layout of the site, ranging between 300 and 400m in length and 180 and 320m in width.

The system was further articulated with two scales of blocks in the subsequent planning of Sanggye new town in the north of Seoul (1984). The main structure of the new town was defined by super blocks of 600 by 900m, larger even than those in Gangnam[50]. Each one contained 3,000 to 4,000 households, two elementary schools, one junior high school, and one high school. Those super blocks were divided into three sub-blocks of 600 by 300m. The overlap of scales allowed for improved access to both daily needs and larger amenities in the central area (I. Jung, 2013, p. 67).

In the five new towns planned beyond the green-belt since 1989, population density doubled from the 150 residents / Ha. of Gwacheon from a decade earlier, due to the larger proportion of mass housing and to the construction of high-rise apartment buildings. The living zone theory was still used, but block sizes were reduced to 415 by 538m. in order to account for the higher density (I. Jung, 2013, p. 68).

The use of the walkable distance for daily activities to define the dimensions of a community in modern times coincided with the approach taken by traditional Chinese urban planning, which standardized the size of urban blocks in one *li* (里), or the size of a village (between 400 and 500m).

47 See Figure 8-33 and Figure 8-47.

48 See '3.12 Planning of Mok-dong New Town' in Chapter 3, Volume 02.

49 See Figure 8-34.

50 See Figure 8-28.

8.6 THE NEIGHBORHOOD UNIT AND ITS EVOLUTION TO THE 'LIVING ZONE' THEORY

The 'neighborhood unit' is an integral physical planning model conceptualized for the design of self-contained neighborhoods in metropolitan areas during the early twentieth century in industrializing cities[51]. There are different claims to the authorship of the concept, which was already present in Ebenezer Howard's idea of 'wards' within the city from his seminal work *'To-Morrow: A Peaceful Path to Real Reform'* (1898); or in Clarence Stein and Henry Wright's design of Sunnyside Gardens in Queens, built between 1924-28 (Mumford, 1951). The name and the most known formulation came from American sociologist and planner Clarence Perry, based on his research of a formula for the distribution of playgrounds in the New York metropolitan area, which eventually led to the re-definition of the modern city based on residential communities. Over time, the modular nature of the neighborhood unit facilitated its adoption as the building block of residential expansion in periods of fast urban growth, consolidating a range of progressive social visions from the time into a few tangible design principles (Lu, 2006, p. 372).

Description

The main reasons for the widespread adoption of Perry's theory since its inception were:

- The simplicity with which it defined the ideal size of a residential community, in spite of its social, economic and political implications, based on the minimum population that could sustain one elementary school – between 5,000 and 9,000 residents.
- The strong correlation between the social dimension of the neighborhood unit and its spatial configuration, through the definition of a maximum area within a walkable distance for daily activities of five minutes, or a quarter of a mile (400m.)

Global Impact

The concept was quickly embraced by architects, planners, government agencies and private developers alike all over the world, especially in the post-war project of modernization and nation-state building. In the USA, a number of garden suburbs were designed using the neighborhood unit model, and the 1946 *Preliminary Comprehensive City Plan of Chicago* proposed to arrange the city in 514 self-contained neighborhoods and 59 communities. The work of Ernst May was deeply influenced by his training in the UK under Raymond Unwin, where he became familiar with the Garden City movement and its principles for residential community design, many of which were shared with the neighborhood unit. The CIAM addressed the concept in different occasions, and in *La Charte d'Athénes*, Le Corbusier wrote: *"The point of departure for all town planning should be the single dwelling, or cell, and its grouping into neighborhood units of suitable size"* (Corbusier, de Villeneuve, & Giraudoux, 1957, p. 134). The adoption of the neighborhood unit concept in the British academic discourse during the 1930s became the basis for their implementation in the different waves of new towns planned across the country after the war. In particular, the use of the model in the second-generation new town of Cumbernauld (1955) and in the unrealized plan for Hook (1959) was very influential in the design of new settlements in Israel and new towns in Japan. In addition, the residential sectors of the new capitals of Chandigarh, Brasilia and Canberra were based on neighborhood communities. The concept was adopted as well by the welfare society arising in Scandinavia after the war, and implemented in the ABC Cities around Stockholm or in the communities built by the Housing Foundation in Finland. On the other side of the Iron Curtain, community design stroke a very meaningful cord with the communist emphasis on collective life, and the neighborhood unit became the basis for the design of the *mikrorayon* or micro-district, which standardized residential sectors across the soviet area of influence. Due to its capacity to shape human settlements in such diverse contexts, architectural historian Duanfang

51 See '5.4 Clarence Perry's Neighborhood Unit' in Chapter 5, Volume 02.

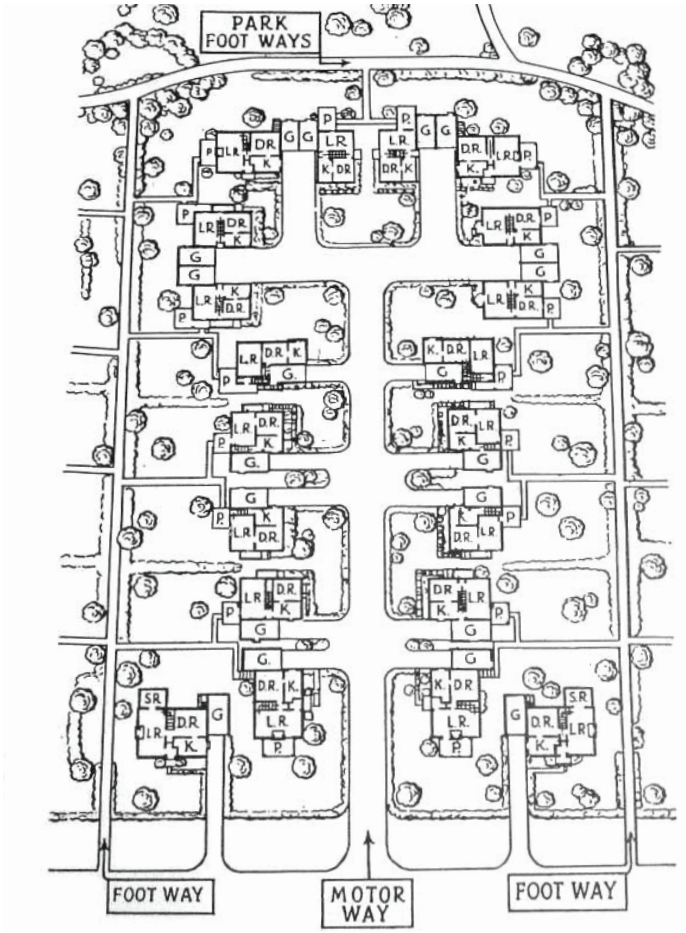
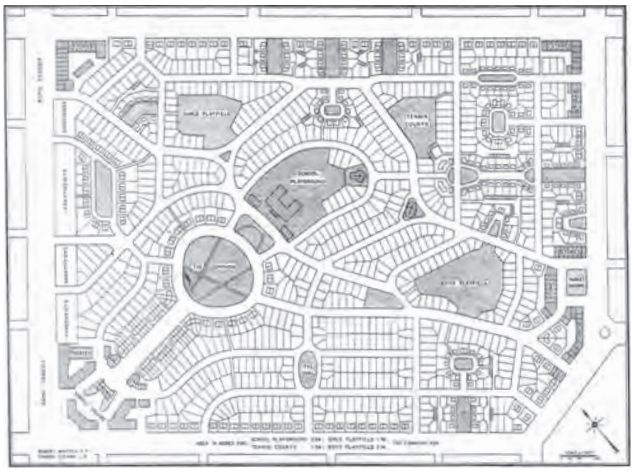


Figure 8-29. Original design of a typical housing cluster for Radburn (NJ), showing separation of pedestrians and vehicles.
Source: Clarence C. Stein and Henry Wright (1929). The drawing was included in Perry's *'The Neighborhood Plan'* as an example of a comprehensive design for a whole neighborhood addressed to the emergence of the automobile.



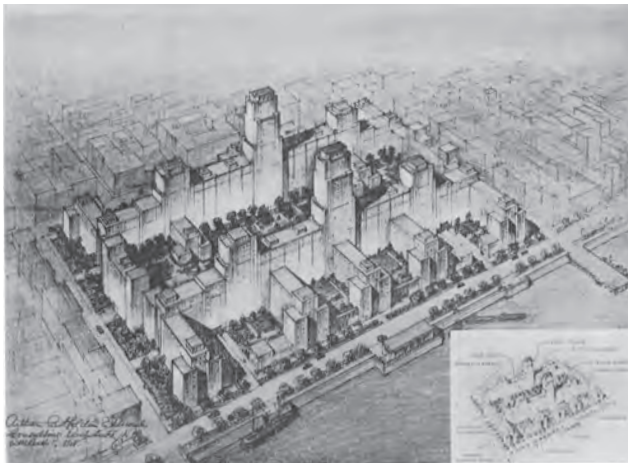


Figure 8-30. 'A subdivision for modest dwellings planned as a neighborhood unit' (1929).
From Clarence Perry's *'The Neighbodhoor Unit'*, p. 36.

Figure 8-31. The *'Five Block Apartment Development'*: Perry's proposal for the urban regeneration of decaying central residential areas through high-density neighborhood units (1929).
From Clarence Perry's *'The Neighbodhoor Unit'*, p. 108.

Lu has argued that the neighborhood unit is a 'Global Urban Form' (Lu, 2006, P. 373).

High-Density Neighborhood Units

While initially the idea of the neighborhood unit was fashioned for single-family housing areas in the North-American suburbs[52], Perry himself saw the possibilities of adapting the concept for the renewal of deteriorated central areas of higher land value, especially in the context of Manhattan in the late 1920s[53]. The increase in residential density compared to their suburban counterparts implied a reduction of the overall footprint and the consolidation of existing urban blocks into larger ones so there would be no through traffic (four or five Manhattan blocks). According to the author, the advantages of such residential environments would be the following (Perry, 1929, p. 113):

- The definition of urban neighborhood units as a single unit of development was a practicable way to decrease residential density in formerly overpopulated central districts (such as the tenement areas in lower Manhattan).
- They were the best way to increase open space in congested urban areas, at the expense of those who would enjoy them (privatization of open space).
- They would reduce car accidents.
- They would create self-contained communities, with their related social benefits.

Perry used the reference of Tudor City in Manhattan, built between 1927 and 1932. These high-density neighborhood units are a clear precedent for the *apat'u tanji* in Seoul, especially in urban renewal projects since the 1980s through the Joint Redevelopment projects (JR).

Neighborhood Units in Japanese Modern Urbanism

Japanese elite architects quickly adopted the neighborhood unit idea during the 1930s. Sano Toshikata and Uchida Yoshizō were professors at the Tokyo Imperial University, where they established the Rationalist School. Through their work and their teaching positions, they *'played a crucial role in shaping Japan's approach to urban planning'* (Hauk, 2015, p. 26). In 1939, Uchida was commissioned an urban plan for the Chinese city of Daidō (Datong), 300 km. west of Beijing and a strategic source of coal for the Japanese Empire's colonial economy. Based on an extensive survey of state of the arts examples of housing subdivisions in the West, his team's proposal featured neighborhood units (*kinrin tani*) of one square kilometer designed for 1,000 households on average. Closely following Perry's theory, each unit featured an elementary school, a sports field and a park at their center, with shops in the periphery. Internal road layouts prevented through traffic by the extensive use of cul-de-sacs, referring to Clarence Stein and Henry Wright's design for Radburn in New Jersey from 1929[54] (Kuan, 2013, p. 192). Not only these academics adapted modern planning concepts to the Japanese context, but they also trained the generation of architects who would be in charge of the reconstruction of the country after World War II, especially in the field of mass housing. Through the Dōjunkai Foundation, Uchida contributed to design Japan's first public housing prototypes, and later went on to found the City Planning Institute of Japan (CPIJ) in 1951. The institute played a crucial research role for the development of Senri New Town outside Osaka since 1955. Takayama Eika, a member of his team, founded the first urban planning department in Tokyo University in 1962 and would be instrumental in the design of Senri New Town (Hauk, 2015, p. 26).

Senri New Town, built between 1962 and 1970, was Japan's first new town and as such, it introduced the key principles of modern town planning to the country. The main authors for the design

52 See Figure 8-30.
53 See Figure 8-31.
54 See Figure 8-29.

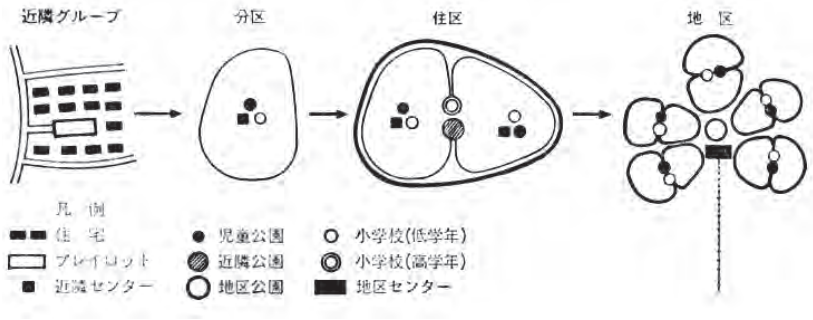


Figure 8-32. Diagram showing the hierarchy of nested scales organizing Senri New Town (1960s).
From left to right: neighborhood groups, sub-districts, neighborhood units, and districts. Seource: Ōsakafu, *Senri nyūtaun no kensetsu*, included in Hauk, *'Postwar Residential New Towns in Japan'* (2015).

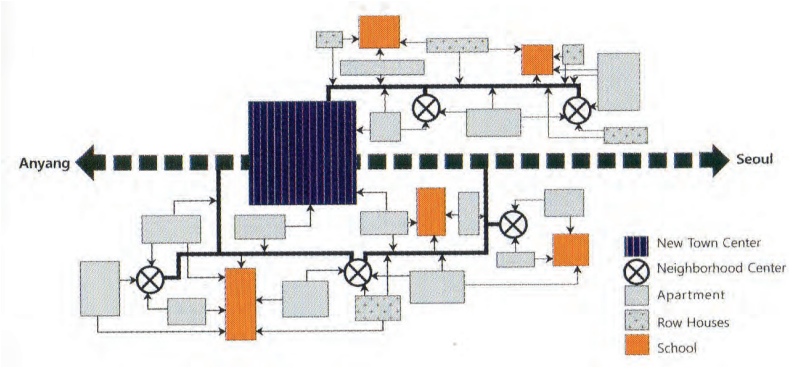


Figure 8-33. Diagram of the planning of the new town of Gwacheon based on the 'living zones' (*saenghwalgon*), or nested community scales (early 1980s).
Source: Korea Housing Corporation.

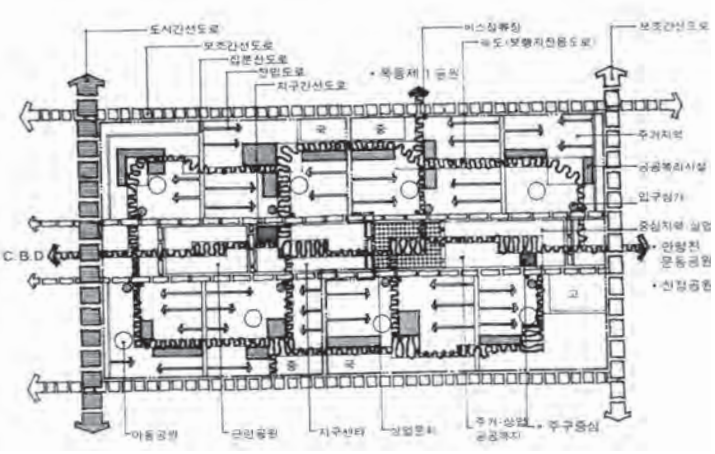


Figure 8-34. Diagram of the planning of the new town of Mok-dong based on the 'living zones' (*saenghwalgon*), or nested community scales (early 1980s).
Source: Korea Housing Corporation.

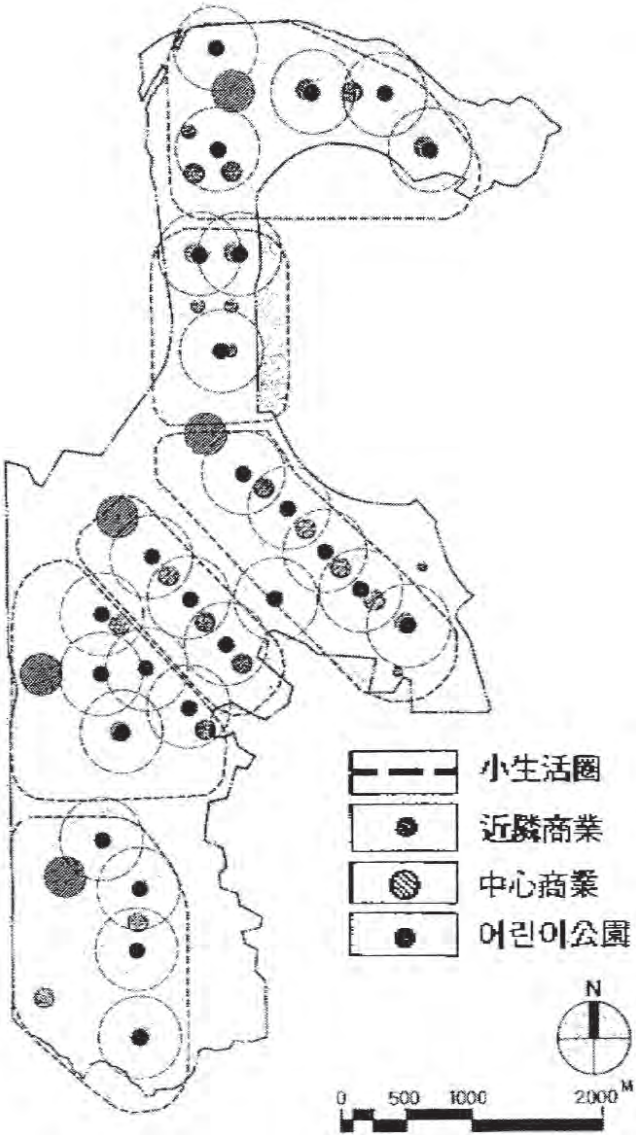


Figure 8-35. (Left) Diagram of the planning of the new town of Bundang based on the 'living zones' (*saenghwalgon*), or nested community scales (early 1990s).
Source: Korea Housing Corporation.

were Nishiyama Uzō and Takayama Eika, drawing from Clarence Perry's neighborhood unit theory, Thomas Adams' work on garden cities, and Gottfried Feder's clusters of self-contained neighborhoods; as well as on contemporary European new towns like Vällingby near Stokholm or Tapiola in the outskirts of Helsinki. The master plan featured fourteen clearly defined neighborhood units and ensured an even distribution of amenities across the project. In her thesis on Japanese new towns, Michelle L. Hauk describes how *"Nishiyama took a sociological approach to the design and was was concerned with fostering community within the project […] This led him to propose a hierarchy of urban units - shi (city), jūku shūdan (neighborhood districts), kinrin jūku (neighborhood units), kinrin bunku (neighborhood sub-districts), and rinpoku (neighborhood blocks) - designed to help build strong relationships between different social classes through adjacency on the block level and encounter at the scale of the district and the city"* (Hauk, 2015, p. 104). This complementing of the neighborhood unit with a wider hierarchy of scales would become a strong precedent for the planning of later new towns[55].

The development of Tama New Town 30km from Tokyo since 1962 would be the largest new town built in Japan[56]. Covering 3,061 Ha and with a target population of 286,000 residents, it had twice the size of Senri New Town. It was also much bigger than any European post-war new town, as it accommodated 4.5 times the population of the average British new town, five times that of Vällingby in Sweden, and ten times that of Tapiola in Finland (Hauk, 2015, p. 141).

As in Senri New Town, the neighborhood unit theory was a central element of the design, but in this case it abandoned the original cluster organization and adopted instead a linear form. The overall linear structure of the new town forced neighborhood units to be arranged in long patches perpendicular to the main urban spine and major district centers, overcoming their isolation. This affected the connections among the different units and the location of their internal components, which were dispersed throughout each unit. Public and civic spaces were placed in between units in order to support interactions among them (Hauk, 2015, pp. 160-161). In this way, different hierarchies of amenities (open spaces, district and neighborhood centers, and schools) were stitched together throughout the new town across neighborhood units, providing overlapping hierarchies of scale in a similar manner as in Senri New Town.

Neighborhood Units in Seoul and their Evolution to Living Zones

The neighborhood unit was adopted for the first time in Seoul for the planning of the Jamsil New Town (1974). Upon completion, it became evident that, while the neighborhood unit model was very helpful in determining block dimensions and street layout, it was limited in relating the units among themselves and to larger urban systems. Perry himself had declined that ambition, in order to focus solely on the internal planning of the units: *"It is with the neighborhood itself, and not its relationship to the city at large, that this study is concerned"* (Perry, 1929, p. 34). In order to address this shortcoming, British planners had already developed a three-tier system of scales, encompassing neighborhood, district and town, following an earlier notion by Perry of a hierarchy of service centers (Lu, 2006, p. 372). This hierarchy of nested scales evokes the scales of human association developed in regards to the concept of habitat by the Team 10[57]. As mentioned earlier, the planning of Senri New Town had also encompassed this nesting of scales. In a similar way, the Promotion of Housing Construction Act of 1979 introduced three complementary planning scales to the neighborhood unit, called 'living zones' (생활권, *saenghwalgon*[58]). The smallest living zone was based on walking distance and provided basic administrative, commercial and cultural facilities for daily life. It could encompass from one to three neighborhood units depending on population density and included a subway station. A medium living zone referred to an urban space

55 See Figure 8-32.
56 See Figure 8-42.
57 See '21.2 Habitat as a Dialectic Complement to the Functional City' in Chapter 21, Volume 01.
58 See Figure 8-33.

Figure 8-36. ***'A trip from Puerta del Sol to Ciudad Lineal'*** **(1882).**
The map shows the proposed connections between downtown Madrid (Puerta del Sol, bottom left corner) and the Ciudad Lineal on the periphery (right side).

Figure 8-37. Le Corbusier, schematic proposal for Rio de Janeiro (1929).
Image: Fondation Le Corbusier.

Figure 8-38. Le Corbusier, diagram of Europe as a linear city (1942).
Included in the project *'La cité linéaire industrielle'*. Image: Œuvre Complète V04, Fondation Le Corbusier.

Figure 8-39. The MARS plan for London (1938-42).
The goal of the plan was to redevelop London in order to provide the capital with a clear structure and to prevent sprawl. It implied the rebuilding of most of the city. Source: Architectural Review magazine, June 1942.

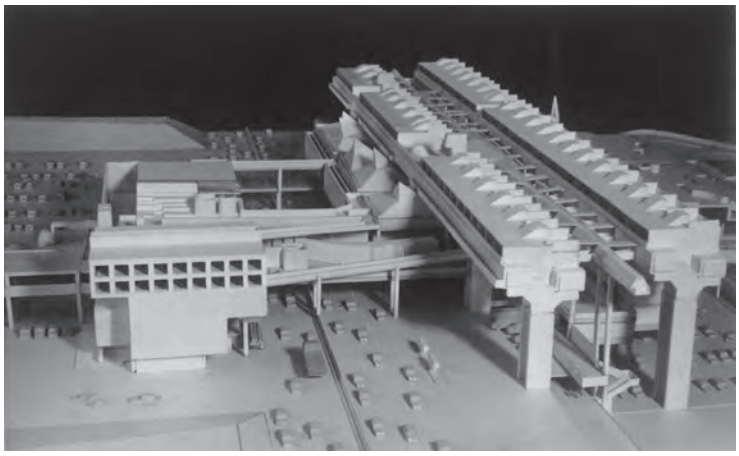


Figure 8-40. Model of Cumbernauld Town Centre (1963).
The Town Centre was designed by Geoffrey Copcutt during the 1950s as a linear megastructure. The commercial center was to be surrounded by high density housing accessed by a netweork of pedestrian paths separated from vehicular transit.
Source: Architectural Design magazine #5, May 1963.

easily accessible by public transportation, such as the catchment area of a high school. It also included large supermarkets and department stores for weekly shopping. Finally, a large living zone was defined as an autonomous urban system, such as a large city or metropolis[59] (I. Jung, 2013, pp. 65-66).

The living zones featured three major differences from the neighborhood units (I. Jung, 2013, p. 65):

- While neighborhood units where non-hierarchical, self-contained clusters, the living zones introduced a hierarchical framework of scales.
- This hierarchical framework was based on the provision of urban amenities for a convenient lifestyle, classified into different scales of activity. Their focus was on ensuring the provision of daily, weekly and monthly services rather than the strengthening of communities as the neighborhood unit did.
- Finally, the idea of nested scales of urban amenities supported a more open-ended approach to change and adaptation over time than the fixed structure of the neighborhood units allowed for.

Perry's original neighborhood unit idea related the built environment with the social relationships that sustained it. His ultimate goal was the building of community spirit, and technical or spatial aspects were subordinated to this social goal. Nevertheless, in South Korea the system was adopted due to its potential as a practical method to determine the sizes of blocks, the layout of streets, and even the size of urban areas and the adequate position and distribution of urban amenities from a problem-solving perspective, rather than to its community building potential (I. Jung, 2013, p. 60).

8.7 LINEAR STRUCTURES OF GROWTH

> *"The straight line, lord and master of the plan in all its details, is perfection, comfort, wealth, health, education, the republic. In short, it is a form of government."*
>
> (Arturo Soria, 1882)

Modern Precedents

Linear forms of organization have been a staple of modern urbanism since the 19th century due to the role of transportation, mobility, and efficiency as major driving forces of urban development. In 1882, Spanish urbanist and civil engineer Arturo Soria y Mata unveiled his proposal for the *'Ciudad Lineal'* (Linear City) in the outskirts of Madrid (see Figure 8-36). In order to overcome the problems of lack of hygiene, overcrowding, and deficient transportation that gripped the traditional city, he intended to join existing urban cores with a new fabric articulated along main arteries defined by train infrastructure. This central spine would also carry basic public services such as water, gas, sewage, electricity, telephone, and pressurized air tubes for pneumatic post. The overall width of this urban strip was about 500 meters, organized in parallel bands that acted as filters transitioning towards the agricultural land surrounding it. In this way, the *Ciudad Lineal* brought together the urban and rural worlds, overcoming the traditional dichotomy between city center and suburbs. According to the author, the project would be constantly growing, and he even envisioned it could span different countries or even continents. The project underwent many vicissitudes due to the lack of funding and opposition from various interests, and finally only 5 km were built before becoming absorbed into the expanding traditional city.

In spite of the project not developing as intended, it did have a long lasting influence in different contexts during the decades to come. Relevant examples are Edgar Chambless' Roadtown project (US, 1910-30); Nikolai Milyutin's linear city proposals for Stalingrad, Magnitogorsk and Nizhni Novgorod (1920s-30s); Le Corbusier's propos-

59 See Figure 8-35.

Figure 8-41. Schematic design for the South Seoul Plan by HURPI (1966).
The plan relied on a central spine of services and facilities running N/S, with E/W neighborhood axis perpendicular to them.
Source: Kyu Sung Woo Archive, redrawn by Jung Sanghoon (2014).

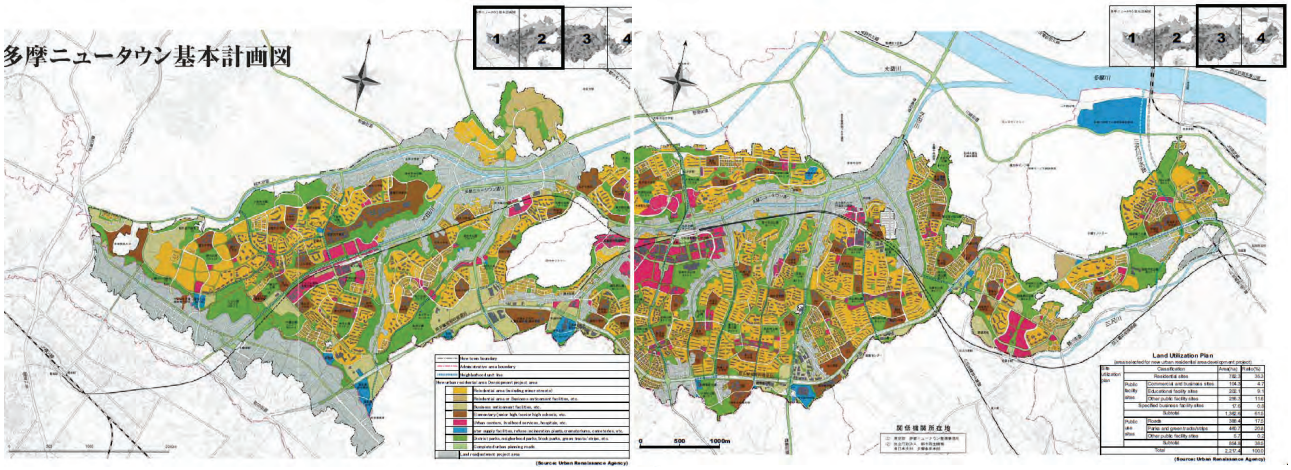


Figure 8-42. Master plan for Tama New Town around 2006.
Designed as a new town in 1965, the development is about 14Km long and between one and three Km wide. It is home to a population of about 200,000.
Source: Urban Renaissance Agency (UR).

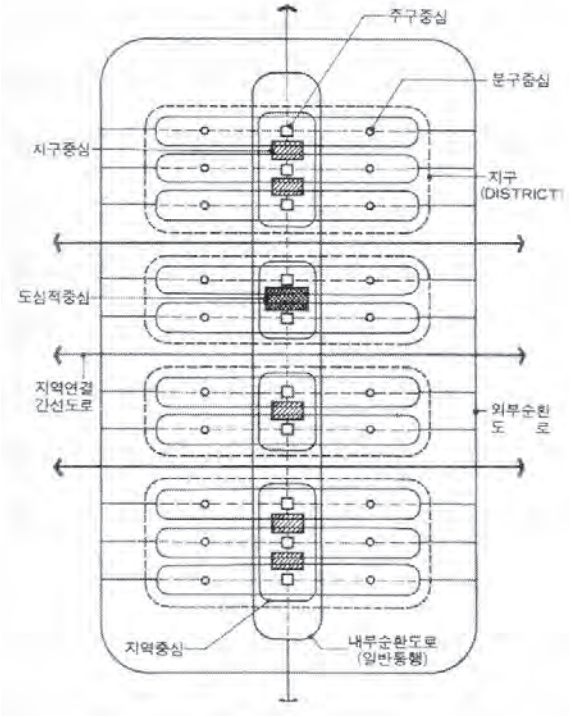


Figure 8-43. Diagram of the basic organization of Mok-dong along a central spine of amenities (1983).
Source: Seoul Metropolitan Government.

als for Rio de Janeiro[60], Algiers and Zilin (1930s); Hilberseimer's Decentralized City, especially in its regional scale (US, 1944); Rasmussen and Bredsdorff's Five Finger Plan for Copenhagen (1947); Reginald Malcolmson's Metro-Linear city (US, 1956); Constantinos Doxiadis' studies, tested in the planning of Islamabad (1960); van den Broek and Bakema's Pampus Linear City (Amsterdam, 1965); and Michael Graves and Peter Eisenman's Jersey Corridor Project (US, 1965); among others.

Linear Planning in 2nd Generation New Towns in the UK After World War II

A particular implementation of the linear city took place in the design of the central areas of two paradigmatic second generation new towns in the UK: Cumbernauld[61] (Scotland, 1955), and especially Hook (Hampshire, 1959). Even though this last plan was eventually abandoned, the high-density linear forms proposed became such a reference for new towns elsewhere, that the report of the project, entitled *'The Planning of a New Town'*, was praised as the *"most influential urban planning document of its generation" (Pevsner & Lloyd, 1967, p. 296).* The flexibility and adaptability of linear urban systems made them particularly attractive to Japanese Metabolist architects, which adopted them in pivotal projects such as Tange's Tokyo Bay project (1960). The design for Tama New Town near Tokyo was also highly influenced by the linear organization of Cumberland and Hook's town center, establishing an essential reference for Korean new towns.

The innovation brought by the design of the central area of Hook was the adoption of a linear form rather than a central one, with the underlying idea being that a greater number of people could surround a linear central spine than a radial one. This central spine was seen as the best solution to achieve the different requirements the central area had to fulfill: the need for maximum accessibility of pedestrian and vehicles; the requirement of a continuous shopping center in order to be efficient; and the need for a compactness and intimacy in order to provide quality and character as the main gathering place for the new settlement. It also addressed issues raised with the development of the first generation of British new towns: the need for higher density; the fragmentation and lack of centrality due to the division in neighborhood units; the predominance of the automobile and the need to segregate pedestrians from vehicles; and finally the possibility of expansion.

Linear Planning in Japanese New Towns

The planning of Tama New Town to the west of Tokyo began in 1962 as a model of rational development in the suburbs with the goal to address the housing crisis in the capital through the provision of a high-quality living environment for the emerging urban middle class. Covering an area of 3,061 Ha and with an estimated population of 286,000 people in 58,239 units, it was a very ambitious project compared to European post-war new towns[62]. The sheer scale of the project and the period of forty years to implement it required an incremental and flexible approach that would allow the planning to adapt to changing conditions over time. This was achieved by adopting a linear city structure, what was termed the *'Hard Shell; Soft Cells'* scheme. That also allowed anchoring the project into its surrounding landscape. The main elements of the project were (Hauk, 2015, pp. 147-153):

- The 'Hard Shell' consisted of a framework of transportation infrastructures (main roads and railroads) that allowed residents to commute to Tokyo, but also formed the main urban spine that integrated the different districts along the 14 km of the project and defined the boundaries of the neighborhood units. Different hierarchies of roads were designed to adapt to changing needs over time.
- The 'Soft Cells' were the 21 neighborhood units, or areas outlined by the hard shell around them. The cells were defined around a middle school each, and became larger, more flexible, and more organic with each iteration of the plan. A separate network of pedestrian

60 See Figure 8-37.
61 See Figure 8-40.
62 See Figure 8-42.

paths waved through the neighborhood units, connecting housing units with amenities and landscape features.

- The district centers reinforced the central character of the main spine. Since they corresponded with the location of the seven commuter rail stations, they acted as thresholds for the new town and provided the central community and commercial functions that organized the neighborhood units. They also acted as powerful destinations within the larger region, by providing large-scale civic and commercial amenities. The concept of the district centers was highly influenced by post-war discussions about the reconceptualization of the city core, in relationship to issues of post-war reconstruction as well as with the emergence of suburbia. The relevance of the discussions about the core was exemplified in the CIAM 8 of 1951 in Hoddesdon, UK, dedicated to the 'heart of the city', in relationship to the concept of 'habitat'[63].

Introduction of the Linear City Model in Seoul

The linear city model was introduced initially in Seoul as an alternative to the growth model adopted in the 1966 City Master Plan. The plan contemplated the concentric expansion of the city, a feature that was criticized by Aaron B. Horwitz, professor at the University of California at Berkeley hired as a consultant for the plan. According to the expert, the proposed radial expansion of the capital would not be able to cope with the prediction of rapid growth of car ownership, and it did not correspond with existing basic patterns of human settlement either. He suggested instead the adoption of a linear development model. Oswald Nagler, head of the Housing, Urban and Regional Planning Institute (HURPI) since 1965, also agreed that a linear urban model would be more capable to adapt to the uncertain conditions of Korea's economic, demographic and urban growth (I. Jung, 2013, p. 54). Nagler himself favored linear development rather than a concentric one within HURPI's set of urban design principles specific for Korean cities, based on field surveys, social analysis, statistics and also on the precedent of *'The Planning of a New Town'*, the report on the planning of Hook New Town by the London City Council published in 1961 (S. Jung, 2014, p. 7). He had the opportunity to implement those principles in a proposal for the plan of South Seoul from 1966[64]. Given the extensive scale of the area, a hierarchy of axes providing services was distributed across the site. The central spine running north – south contained all major services, businesses and facilities, as well as weekly and monthly lifestyle needs such as offices, shops, entertainment venues and cultural facilities. Perpendicular neighborhood axes run east – west, in such a way that each household would be located within walking distance (500 m) from them. They contained daily needs such as shops, restaurants, cafes, real estate agencies, etc. Parallel traffic axes also run East – West and were accessible from the major roads encircling the area. Neighborhood units consisted of blocks of 500 by 500 meters for a population of about 10,000 people, the minimum to support one elementary school. Traffic was allowed around the central spine and the neighborhood spines only for maintenance and delivery, and the traffic infrastructure was planned according to future projections (S. Jung, 2014, pp. 9-11). The plan was finally not implemented.

Also during the 1960s, Kim Swoo-geun brought the influence of Japanese Metabolist linear structures in two of his earlier works: the Sewoon Sangga shopping arcade of 1967 and the original development plan for Yeouido of 1968[65].

63 See '27.2 'Habitat as a dialectic complement to the Functional City' in Chapter 27, Volume 1.

64 See Figure 8-41.

65 See '3.5 Yeouido Plan' in Chapter 3, Volume 02.

Linear Structures of Growth in Seoul's New Towns

Twenty years after HURPI's South Seoul Plan, Nagler had the chance to test his urban design principles as a consultant for the Mok-dong Plan of 1983. The main feature was a central service spine running north – south following the shape of the area and the stream on its eastern flank. The size of this axis was similar to the neighborhood axis in the South Seoul Plan, and included regional shopping centers, hotels, cultural facilities, offices, a central public space, recreational venues, etc[66]. As in the plan for Gangnam, this central spine was surrounded by neighborhood units organized around primary schools. Even though the final scheme shows some variations from the original design by Nagler due to the implementation by local planners, the concept of the hierarchical spine network finally proved its potential and would be become a basic reference for the planning of new towns and satellite cities afterwards, such as Bundang, Ilsan and Dongtan (S. Jung, 2014, pp. 14-17).

The five satellite cities beyond the greenbelt were meant to be bedroom communities located within one hour commute travel time from downtown Seoul. They were designed by a second generation of Korean planners, mostly trained in the US, and reflected a growing sensibility for higher density, the relationship with the natural context, and the sophistication of networks of green space. They were all based on the development of hierarchies of service spines, in connection to regional mass transit infrastructure.

Bundang, planned at the similar time as Ilsan, is located along a north – south transportation corridor following the Tancheon stream that configures one of the natural thresholds into Seoul from the south. As such, the satellite city was to be accessed by the Gyeongbu Expressway as well as by a dedicated subway line. The location along the valley favored the adoption of a linear structure, featuring strong resemblances with the planning of Mok-dong and that of Tama New Town near Tokyo[67]. A main service spine of about 9 km follows the N/S transportation corridor and hosts regional amenities and weekly and monthly lifestyle needs, major services and business, entertainment venues and cultural facilities, coinciding with the location of six subway stations. Perpendicular to this main axis and climbing up towards the mountain range to the east, five neighborhood axes provide daily facilities to the neighborhood units along them. Linear green spaces are wedged in between the neighborhood fingers, establishing ecological corridors from the Tancheon stream up to the mountains to the east, and a network of pedestrian paths connects them transversally through the bands of neighborhood units.

The planning of Sejong Administrative City during the first decade of the 2000s in a location 160 km south from Seoul provided another opportunity for the further elaboration of linear urban structures at a large scale. The relocation of the capital had been a key element of president Moo-hyun Roh's electoral pledges, as part of his reformist agenda of balanced national development. However, since the Constitutional Court rejected the government's plan, it had to be downsized to include only the relocation of the nation's administrative offices. After an international design competition held in 2005, a ring-shaped scheme was selected as the main spatial framework for the new city. The ring was nothing more than a bent central spine with its ends joined. Main urban functions were distributed along, forming six sub-centers. Secondary, neighborhood axes perpendicular to this main ring articulated residential areas, while ecological corridors were allowed to penetrate it, connecting the natural surroundings with the river and the natural features preserved in its center. The scheme allowed the phased implementation of the project over time, it minimized the impact of the new development, it maximized the views of the natural landscape, and its lack of hierarchy symbolized the president's agenda of balanced national development[68].

66 See Figure 8-43.

67 See Figure 8-35.

68 See Figure 8-48.

8.8 THE IDEA OF THE 'NEW TOWN'

The generic denomination 'new town' in modern times refers to any urban development or expansion planned in a holistic manner, typically on land that was previously not urbanized, with varying degrees of autonomy. The term developed from the New Towns Movement that emerged in the UK after World War I in order to address urban reconstruction and decentralization, based on principles from the Garden City Movement. The concepts put forward in between the wars became the backbone of the New Towns Act of 1946, which led to the construction of 28 New Towns across the country during the next 50 years. The British New Towns Movement had a strong impact in the post-World War II reconstruction and urbanization boom around the globe, to the point of becoming a 'global urban concept' in a similar way as the neighborhood unit has become a 'global urban form'. The two concepts have been tightly related, since the physical design of new towns has employed neighborhood unit principles in many instances.

Origins of the New Town Concept

Ebenezer Howard proposed an alternative model for modern civilization as a reaction to the grim urban conditions resulting from the Industrial Revolution, based on social and urban reform ideals prevalent at the end of the 19th century. It was not only a spatial concept, but a social and economic model as well. He proposed to reorganize society in networks of 'Garden Cities', or planned towns of limited size surrounded by agricultural land, so they would benefit from the advantages of both the city and the countryside: *"There are in reality not only, as is so constantly assumed, two alternatives –town life and country life- but a third alternative, in which all the advantages of the most energetic and active town life, with all the beauty and delight of the country, may be secured in perfect combination"* (Howard, 1902, p. 15). Those enclaves would be self-sufficient and managed by the citizens who had economic interests on them, in order to break away from capitalism through a sort of cooperative socialism. This vision was laid out in his pivotal book *'To-Morrow: A Peaceful Path to Real Reform'* published in 1898 and revised in 1902 as *'Garden Cities of To-morrow'*[69]. The attention and funding received allowed for the implementation of his ideas in Letchworth Garden City since 1903, designed by architects Richard Barry Parker and Raymond Unwin in Hertfordshire, United Kingdom.

Towards the end of World War I, the success of Letchworth and the need for post-war rebuilding brought the ideals of the Garden City back to the fore. The 'New Townsmen' group, integrated by Howard and his followers, proposed the creation of government-supported new towns to address housing needs, to no avail. The administration focused instead on building housing suburbs as extensions of existing cities during the inter-war period.

The Role of the New Towns during post-World War II Urban Reconstruction in the UK

After World War II, the government was faced with the challenge of urban reconstruction, and at the same time, many voices called for the need to address escalating urban congestion in the capital through planned decentralization policies. There was no other option than finally embracing the New Townsmen initiative with the New Towns Act of 1946. The act supported the construction of 28 official New Towns in three phases[70] (1946-50; 1961-64; and 1967-70). Simultaneously, the concept was adopted globally by many countries facing the same issues of urban reconstruction, urbanization and the need to redistribute population after the war. At that point, the 'new town' denomination had become so widespread and generic that it was also used for other types of planned developments beyond the original concept, including urban extensions and bedroom communities.

69 See Figure 8-44.
70 See Figure 8-45.

Global Impact

The concept of new town offers a rich case study of international knowledge flows, in tandem with the ideas of mass housing and of the neighborhood unit -even though they would not always overlap. Howard's garden city had already influenced the planning of residential sectors in countries with similar urban problems due to industrialization. For instance, German architects Hermann Muthesius, Bruno Taut and Ernst May incorporated principles from it in the planning of large housing projects built during the Weimar Republic (1919-1933). Even though most of those settlements were urban extensions dedicated to housing rather than autonomous towns, they featured community elements like playgrounds, schools, theatres, and common washing areas. May's Brigade exported some of those principles to the USSR after leaving Germany in 1930. In the meantime, Howard's ideas had been introduced in Japan by a magazine article as early as in 1907. His alternative to the crowded conditions of the industrial city stroke a chord with the conditions of Tokyo in the late Meiji period and with an emerging democratic movement, prompting the garden city became one of the first Western planning strategies to be comprehensively adopted in the country (Oshima, 1996, p. 140), and later in their colonial enterprises in Asia. In the USA, Clarence Stein and the Regional Planning Association of America (RPAA) he co-founded adopted and spread garden city ideals with key projects such as Sunnyside Gardens in Queens (1923) – where Clarence Perry would reside-, Radburn in New Jersey (1929), and the planning of 22 green-belt resettlement towns under the Resettlement Administration during the New Deal in the 1930s, of which only three would be built[71].

But it would be during the post-World War II urban reconstruction efforts that new towns became a widespread urban solution to address issues of overpopulation, housing scarcity, urban congestion and escalating land values in different political, economic and social contexts. They were related to the widespread adoption of mass housing, which promised to optimize land use and construction systems; and to the emergence of the modern family and the consumer society. Not all would conform to the original concept by Howard, though, characterized by:

- Limited population and land area;
- Built anew (not simple extensions to existing urban areas);
- Surrounded by agricultural land;
- Self-sufficient (not only bedroom communities);
- Managed by citizens who had economic interests on them;
- Intended as an alternative to capitalism through cooperativism.

New Towns in Seoul

In Seoul, the term 'new town' was translated as 신도시 (literally, *'new city'*), or 뉴타운 (phonetic translation of the English *'new town'*), and has been used over the years to designate at least three different types of urban developments, leading to confusion:

- **Urban extension projects:** New sectors built mainly for residential use within municipal boundaries. They were not meant to be self-sufficient and depend on their relationship the existing city in terms of jobs, transportation and amenities: Jamsil New Town (1974), Gwaecheon outside the boundary of Seoul[72] (1980), Gaepo-dong (1981), Mok-dong (1983), Sanggye and Godeok-dong (1984), etc.
- **Satellite Cities:** The five satellite cities planned beyond the greenbelt as part of the national Two Million Housing Construction Plan (주택 200만 호 건설 정책) since 1989. They kept the closest resemblance to the original British New Towns, due to their dependence on the existence of the greenbelt, which was formed after the one from London as well. Even though they were intended to have a larger degree of autonomy, the economic crisis of 1997 did not allow for the full growth of their economic activities and remained mostly as

71 See Figure 8-46.

72 See Figure 8-47.

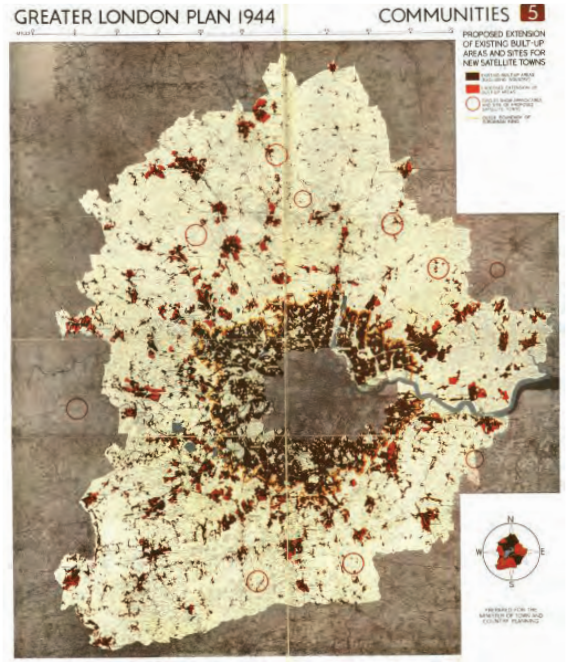


Figure 8-44. (Left top) Ebenezer Howard, Garden City concept (1902).
Diagram originally published in *'Garden Cities of tomorrow'*. Image public domain.

Figure 8-45. (Left middle) *'Proposed extension of existing built-up areas and sites for new satellite Towns'* (1944).
In Patrick Abercrombie's Greater London Plan of 1944. Source: His Majesty's Stationary Office.

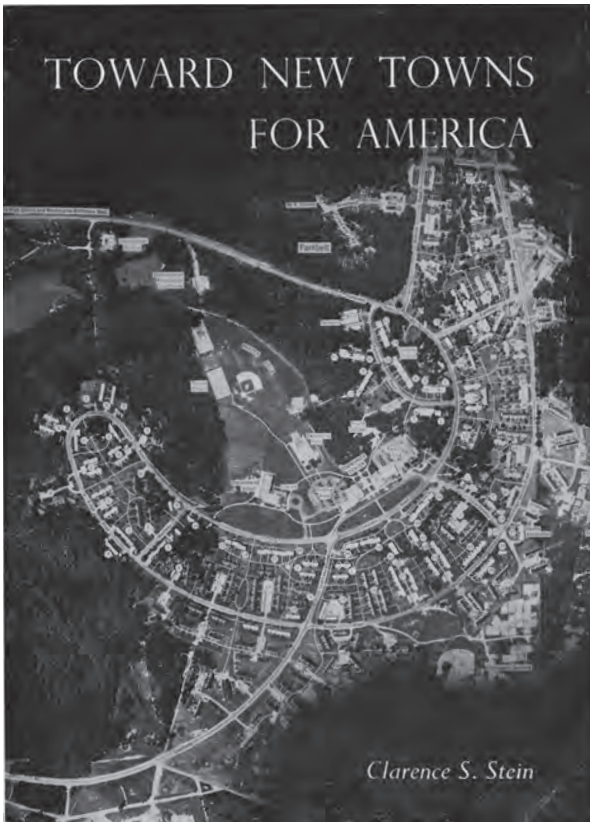


Figure 8-46. (Right top) Clarence S. Stein, cover of the book *'Towards New Towns for America'* (1951). The photograph in the cover shows the new town of Greenbelt, Maryland.

Figure 8-47. (Right bottom) Aerial view of Gwacheon New Town (1981).
Source: Land and Housing Corporation (LH).

bedroom communities of commuters to Seoul. They did spearhead the jump of Seoul to the metropolitan area and initiated the decrease of population inside Seoul.

- **Inner urban renewal projects:** The New Town Project implemented since 2002 under Mayor Lee Myun-bak in order to address inequalities between different districts, especially in terms of education and living amenities. In spite of its well-intentioned origins, the project only worsened the social inequalities it was meant to fight. This interpretation of the new town idea could not be farther from the original: they are not located in the countryside surrounded by agricultural land, but within the consolidated fabric of the city; they are not self-sufficient, but mostly bedroom communities with minimum living facilities; and they are not productive except for their role in real estate speculation. They did not intend by any means to propose a new ideal society as an alternative to capitalism either.

The abuse of the concept until it lost its original meaning is due to the particular appeal the two words hold for Korean society, which encapsulate a series of social aspirations:

- **New:** in opposition to 'old', as a testament to the dual nature of urban growth under the developmental period, inherited from colonial urbanism[73]. The dualism between old and new city recalls the opposition between tradition and modernity, poor living conditions and wealth, unorderly city and planned development[74], and epitomizes the eager pursuit of modernization that has characterized South Korean society during the second half of the twentieth century[75].
- **Town:** as an enclave separated from the rest of the city, exclusive and secluded. It relates to the role of housing as a symbol of status[76].

73 See '8.4 Street grids as frameworks for urban development' earlier in this chapter.
74 See '5.2.5 Propaganda Machine' in Chapter 5, Volume 01.
75 See 'Developmental Experiments' in Subchapter 1.2, Volume 01; and '3.3 Forced Industrialization Supported by the Army' in Chapter 3, Volume 01.
76 See '5.4.5 Apartments as Status Symbols' in Chapter 5, Volume 01.

8.9 CONCLUSIONS

The previous chapters within this section exposed how mass housing in Seoul adopted different roles during the period of study, according to a process of trial and error rather than following long-term urban visions. Decisions were based on short-term economic and political decisions from a problem-solving and reactive standpoint, which favored the perpetuation of tried and tested formulas geared towards financial feasibility, rather than experimentation. Over time, and once mass housing was finally fully adopted as the solution to the 'housing problem', the gradual systematization of the planning and construction of apartment complexes consolidated those tried and tested solutions into a technology that standardized city making. This technology relied on the gradual borrowing, adaptation and integration of planning and architectural processes, strategies and forms from the toolbox of modern architecture at different scales. After elaborating on each of those methods in Chapter 15, the main conclusions are:

- **Long-term, established, design and planning strategies deployed for the streamlined development of mass housing in Seoul, now commonplace and part of the everyday life of residents[77], are actually the result of intercultural appropriations, translations, adaptations and combinations.** This contributes to the notion that modern planning, as an expression of modernity, is not fixed into a rigid set of theories subject to direct borrowing and passive repetition, but is rather an ongoing dialectic of global and local experiences that point to the idea of different, simultaneous modernities. This idea is explored further in Sections 4 and 5 of this research.
- **The process of 'domestication' of foreign ideas responded to highly localized historical, economic and social conjunctures that challenged their original meanings.** For instance, in explaining the financial success of the two first satellite cities of Bundang

77 To the point that, in some cases, their original foreign names have been literally adopted into the Korean language: 'new town' (뉴타운), 'tabula rasa' (타불라 라사), etc.

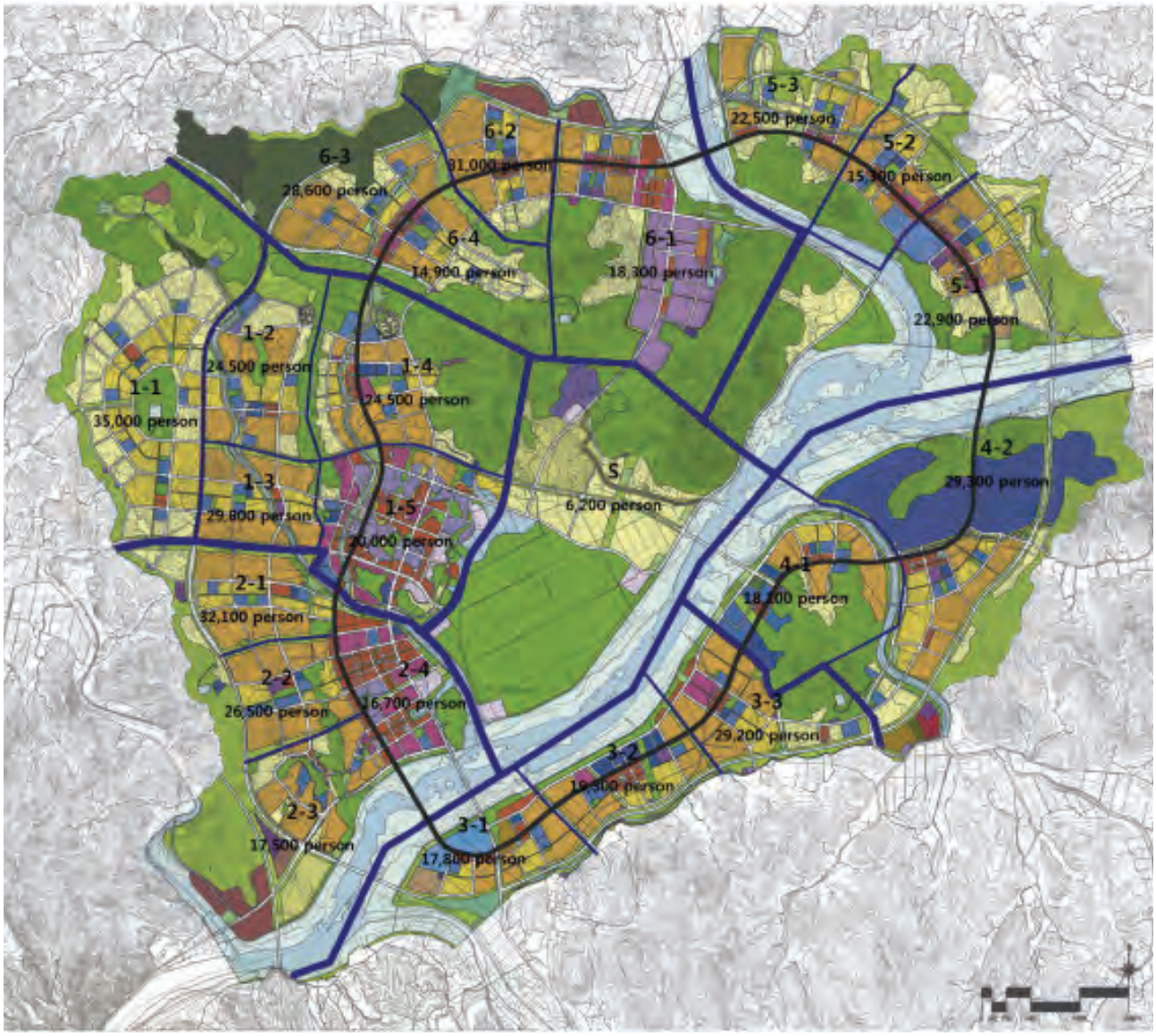


Figure 8-48. Master plan for Sejong City (2006).
Source: Ministry of Construction & Transportation

and Ilsan in comparison to western cases, author Yu Min-joo has highlighted two major differences which made that economic success possible: the developmental regime and its control over housing development; and the critical housing shortage at the time (Yu, 2013, p. 3).

- **In spite of this adaptation to local historical, economic and social conjunctures, mass housing did not respond to the specificities of urban development situations.** The high degree of standardization of the construction of *apat'u tanji* in order to optimize production by lowering costs and expediting delivery times came at the cost of not being able to respond to local specificity. In particular, the same building typologies and urban morphologies were adopted in cases of urban renewal, urban extension, and satellite cities, regardless.
- **The assembly of design and planning strategies from the toolbox of modern architecture into a technology for the standardization of city making during the developmental period bears a resemblance to systems that have sought to rationalize the urbanization process, control the territory and its inhabitants and facilitate the extraction of resources due to colonial expansion.** Some precedents are the Chinese urban ideal since the Zhou period, Roman military encampments, the Spanish *'Leyes de Indias'* (Laws of the Indies) or the Japanese colonial model in Asia, among others. The main difference was the lack of invasion of a foreign territory.
- **The modernizing project of the developmental estate saw its own territory as a resource to control and extract profit from, and urban planning as the means to achieve so.** From that point of view, developmentalism could be seen as a process of colonization from within.
- **The deployment of design and planning strategies is not fixed into a rigid formula; it follows a flexible implementation as a kit of self-contained methods that can be assembled together incrementally.** As the technology evolved through trial and error, individual strategies were put in service to improve shortcomings of previous projects. Depending on the scale or specific conditions of particular developments, or whether they are used in a project of urban extension, inner city renewal, or part of a new urban entity developed from scratch, the different methods may be applied together in a coordinated fashion or in a discrete manner. For instance, the planning of Gangnam relied heavily on the layout of the street network to set up a framework for development, but failed to define urban blocks and to provide amenities that could generate social cohesion. Learning from that, the planning of Jamsil adopted the neighborhood unit theory in order to size blocks consistently and to provide enough amenities according to population estimates. The later planning of Mok-dong attempted to address the limitations of the land readjustment technique deployed in Gangnam and the lack of pedestrian networks in Jamsil by adopting the Housing Site Development system (HSD), and by complementing the neighborhood unit theory with the living zones. All those methods would then be implemented in the satellite cities with a wider scale of the living zone that contemplated urban scale green areas, amenities, and public transportation. In downsizing the system to address the urban renewal of decaying residential areas within the city with the New Town project since 2002, this larger scale of the living zone was dropped as it was not adequate to deal with the existing city.

- **Throughout the research period, a basic module spanning between 400 to 500m consistently defines the scale of a community and relates it to the larger urban structure by standardizing block sizes and the related module of the street network, the typical size of an apartment complex and the critical mass of population to support an elementary school.** This module is consistent through space and time: it corresponded to the Chinese *li* as the standard size of a village, from where it was adopted as the basic block of the city according to the urban guidelines of the Zhou dynasty[78]. It is very close to the distance between Jongno, the main east-west thoroughfare through Hanyang (name of Seoul during the Joseon dynasty), and Euljiro, a parallel avenue laid by the Japanese colonizers at the beginning of the twentieth century, probably influenced by the former. By straddling the Chunggyecheon stream, they provided the main backbone of the modern transformations of the city within the walls. That span also happens to be very close to what Perry considered a safe walking distance for children to walk to school within a five-minute period as the radius of daily routines[79].

78 See '5.1 The Chinese Urban Model' in Chapter 5, Volume 2).

79 A contemporary deployment of a similar module is the ongoing 'Superblocks' project by the Barcelona City Hall to address air pollution and transit congestion as well as to increase green areas and pedestrian safety in Ildefons Cerdà's Eixample. The creation of super-blocks of three by three original blocks yields a square module of approximately 390m, which defines communities with a certain degree of autonomy within the larger grid. For a further description of the model, see: http://www.bcnecologia.net/en/conceptual-model/superblocks.

CHAPTER 9
CONCLUSIONS TO SECTION 2 / CITY SCALE
MASS HOUSING AS AN INSTRUMENT OF CITY-MAKING

Mass housing was adopted as the only viable solution capable of furnishing the scale and rate of housing production needed to respond to the unprecedented housing shortage accumulated since the 1920s[1]. It prompted a transition from building the city incrementally one house at a time to the construction of entire residential neighborhoods. It radically changed the residential landscape of the city from single-storey detached houses to multi-storey collective buildings. It expanded the boundaries of the proto-industrial city inherited from colonial times to the scale of a metropolis. By so doing, the introduction of *apat'u tanji* had an enormous influence, not only on the urban environment but, furthermore, on the definition of the city itself.

In addressing the urban impact of the implementation of mass housing in Seoul, Section 3 pondered whether the need to provide a solution to the housing crisis looming over the capital for most of the century had been understood as a field of experimentation. Has mass housing been seen as an opportunity to define a long-term urban vision from a qualitative point of view, or merely a quantitative matter of providing amounts of housing units from a problem-solving standpoint? In other words, have *apart'u tanji* been able to mean anything more than simple packages of housing isolated within the city?

Based on the analysis of the role mass housing played in the different plans for Seoul (Chapter 3 of Volume 2); of the city that was built (Chapter 4 of Volume 2); on the study of dimensional precedents (Chapter 5 of Volume 2); and on Case Studies of different planned areas (Chapter 6 of Volume 2), the following facts stand out:

- **The road to supply Korean population with mass housing was not straightforward, for many detours were taken.**
- **The one consistent role mass housing has played is as symbol of a modern Korean urbanity.** Besides that, there was no unified vision about the role of *apat'u tanji* in the city or in society. In terms of audiences, they were targeted to all kinds of social classes - from the economic elites to forcibly relocated squatters. They were adopted as state-aided public housing, as well as a strategy to provide access to real estate ownership for the urban middle class. They were placed in all kinds of locations: in reclaimed land along the banks of the river, on sites of removed slums on the hills surrounding the traditional center, in superblocks shared with other types of fabrics in Gangnam across the river, in dedicated new towns and satellite cities, as well as right in the middle of previous residential fabrics. In terms of their urban role, *apat'u tanji* have been used as tools for urban extension, for the renewal of decaying fabrics in the inner city, and for the colonization of virgin land in the metropolitan area.

1 See Chapter 4 in Volume 01.

- **The conflict of interests between the metropolitan and the national administrations has challenged the development of the city, especially in terms of the adoption of mass housing during the decade of the 1970s.** Since the advent of the developmental regime of Park Chung-hee in 1961, Seoul has been ruled by both administrations. While the local government was trying to cope with the housing crisis by adopting mass housing, the central government pushed for population dispersion and for the relocation of the capital further south.
- **Decisions about the location of *apat'u tanji*, their size and their systems of aggregation did not respond to a larger vision capable of articulating them with natural features, existing urban fabrics, or other structures of urban growth such as infrastructures or other mass housing estates.** Instead of being planned in anticipation within a long-term urban vision, and with an eye on ecological sustainability and social feasibility, their distribution was driven by the availability of buildable land, housing policies at national level, and short-sighted economic profit.
- **By the 1980s, changes in the population policies of the metropolitan area at national level allowed for the full-fledged adoption of mass housing as the solution to the housing shortage, in parallel to the predominance of the typology and a growing hegemony of private developers.**
- **At that point, a citywide strategy to relate mass housing to the incipient network of subways was devised.** Nevertheless, the strategy came after twenty years of continuous growth of the city, and its structure was already too consolidated to be reshaped according to the logics of transit-oriented development.
- **In order to fulfill the demand, construction companies borrowed and adapted planning strategies and formal models from the modern movement widely tested and tried in the post-war urban reconstruction abroad.** Over time, the gradual implementation of those strategies through trial and error was integrated into a cohesive system that streamlined the mass production of apartments into a standardized technology for the production of urban fragments.

While each one of the chapters in this section included its own conclusions, this final chapter provides an interpretation of the main findings, grouped in three different parts:

1. Contribution of the Evolution of Mass Housing in South Korea to the Diffusion of Modern Urban Concepts.
2. Mass housing as 'packages of housing' rather than parts of the city.
3. Mass housing as standardized technology for city-making.

9.1 CONTRIBUTION OF THE EVOLUTION OF MASS HOUSING IN SOUTH KOREA TO THE DIFFUSION OF MODERN URBAN CONCEPTS

While the implementation of mass housing in Seoul was not seen as a field for theoretical experimentation, the pragmatic implementation of solutions based initially on borrowings from other places did consolidate over time in a set of accepted practices validated from experience into a local mass housing technology. From the analysis of the different roles of mass housing in Seoul[2], two main phases can be determined in this process of borrowing and adaptation.

During the first period (from the beginning of the developmental regime in 1961 up until the end of the decade of the 1970s), planning and architectural ideas and practices from abroad were borrowed and applied in an irregular and inconsistent fashion. Some of these concepts and methods would be tried, only to be discontinued afterwards. Others would be improved upon over time; and in some cases, concepts initially discarded would have successful comebacks later on. Some examples of this are:

- The set-back plan layouts of the high-density housing sectors in the central quarters of the 1966 Plan for New Seoul, borrowed from Le Corbusier's *immeubles à redents*[3]. The layout never appeared again afterwards.
- Architect Kim Swoo-geun's proposal for Yeouido based on a raised transportation megastructure around which transient housing programs would gravitate, borrowed from Japanese Metabolist projects of the period. The project was discarded due to its costs and lack of economic feasibility. No design of that scale and ambition would appear ever again[4].
- Oswald Nagler's spines of services and amenities proposed for the planning of Gangnam in 1966 did not make it to the final planning for the area, but they were be recovered later in the planning of Mok-dong New Town of 1983 and became a major design strategy for the planning of new towns since[5].
- The adoption of mass housing to resettle squatters forcibly evicted from the slums on the hills surrounding the traditional city, a strategy widely used around the globe, was short-lived due to a fatal disaster related to the lack of financial resources[6].
- The implementation of Clarence Perry's neighborhood concept in the planning of Jamsil in 1974 was so successful that it became a staple in the planning of sectors dedicated to *apat'u tanji* from then on[7]. Nonetheless, the success of the neighborhood unit theory was not based on its community building agenda, but rather on its empirical potential to determine urban form and the provision of amenities from a problem-solving standpoint.

A series of events since the late 1970s paved the way for the generalization of apartments as the residence of choice of the population – the middle class especially – and for their development by private construction companies[8]. Increased demand and the dependence on private developers triggered the optimization of the planning and construction of apartments, in order to meet the strict prices set below market value by the administration[9]. At this point, some of the practices and methods tried until then, proven valid in the context of Seoul, were pressed into service and synthetized in a more coordinated manner. The planning and design of Mok-dong New Town represents a turning point in this dynamic. It relied on the systemic integration of land reclamation of the nearby Anyang stream, the implementation of the neighborhood units and living zones, the organization along a central spine of services, and

2 See Chapter 3, Volume 02 and Chapter 8, Volume 01.
3 See '3.1 New Seoul City Plan, 1966' in Chapter 3, Volume 02.
4 See '3.5 Yeouido Plan, 1969' in Chapter 3, Volume 02.
5 See '8.7 Linear structures of growth' in Chapter 8, Volume 01.
6 See '3.6 Citizen's Apartment Project, 1969' in Chapter 3, Volume 02.
7 See '3.8 Planning of Jamsil New Town, 1974' in Chapter 3, Volume 02; and '8.6 The neighborhood unit and its evolution to the living zone theory' in Chapter 8, Volume 01.
8 See '7. The Whole-Hearted Adoption of Mass Housing Lead to the Planning of New Towns in the Undeveloped Frontiers of the City (1980S)' in Chapter 7, Volume 01.
9 Through the amendment of the Housing Promotion Law in 1977.

it improved upon the shortcomings of the land readjustment technique prevalent until then by adopting the Housing Site Development method (HSD) instead. After the planning of Mok-dong, the integration of these planning and design strategies would be applied systematically in the design of future new towns largely dedicated to mass housing.

Borrowing and adaptation is part of the international diffusion of twentieth century planning concepts, a highly variable process that differed greatly in different contexts, depending on the power relationship between the importer and the exporter of the original concepts, shifts of the dominant centers of innovation, and evolution of the patterns of diffusion over time. Planning historian Stephen Ward has developed a typology of this diffusion by focusing on its mechanisms, the extent to which ideas and practices have changed through their circulation, and the fundamental reason for their dissemination (Ward, 2000). The first phase described earlier corresponds to what the author has defined as 'undiluted borrowing', characterized by an uncritical appropriation, often with a limited knowledge of the different alternative planning models available. It reflects an undeveloped local planning expertise and deference to ideas arising in the countries borrowed from, together with a high reliance on foreign planners to supply leadership (Ward, 2000, p. 49). It was a period of trial and error. In the case of South Korea, the main country borrowed from was the USA due to its political and economic influence after the liberation from Japan and during the Cold War. Foreign aid and the technical assistance that came with it after the Korean War (1950-53) from the USA and international institutions such as the UN and the World Bank became a major channel of external ideas and influences into the country, thus replicating some features from the colonial era into a cultural neo-colonialism of sorts (Ward, 2000, p. 43). Some examples of this influence are the role of US financial and technical advisors in the development of the Mapo apartments in 1962, who recommended lowering the original height of the buildings from 10 to 6 storeys due to the lack of building materials, technical expertise and economic difficulties after the Korean War[10]; the role of Oswald Nagler in setting up the Housing, Urban and Regional Planning Institute (HURPI) commissioned by the Asia Foundation[11], which would have a critical influence in the formation of generations of Korean planners[12]; or the advice of the US National Planning Association (NPA)[13] on fast-track development and modernization[14], among others.

There was also input from other Western nations with well-established modern planning traditions. It is well known General Park's fascination with the German *authobahn* system and its influence in the construction of Gyeongbu Expressway from Seoul to Busan since 1968[15], or the influence of the British greenbelt and the new towns after World War II. There were also individuals who had significant roles as advisors, such as Klaus Blach, a Danish architect and United Nations building research expert working as a technical advisor for the Korea Housing Corporation (KHC) during the 1960s[16]; German architect Mr. Meyer, who had a critical role in the development of the Jong-am apartments (종암아파트) of 1958, the first apartment complex as such built in Seoul; or Aaron B. Horwitz, appointed by the USOM (original name of USAID) to consult the Korea Planners Association on the drafting of the comprehensive plan for Seoul in 1967. Other advisors were Egyptian planner Tarik Carim, sent by the UN Develoment Program, and US planner Mark Fortune, a regional planning advisor by the USAID (Choe, 2003, p. 517), among many others. To this should be added the role of Korean planners who studied and worked abroad – mainly in the US (SDI p. 516) – and brought their experiences back to the country.

10 See Case Study #01 in Chapter 7, Volume 02.
11 A non-profit international development organization founded in 1954, focused on the areas of leadership, institutional development, exchanges, and policy research.
12 See Oswald Nagler in Appendix 1 'Who's Who', Volume 02.
13 A private non-profit organization linked to the United States Agency for International Development (USAID) of the US Government.
14 See 'Developmental Experiments' in '1.2 Hypothesis', Chapter 1 Volume 01.
15 See Figure 1-13 in Chapter 1, Volume 02.
16 His proposal for a plan layout type developed for the Housing Research Institute of the Korea Housing Corporation in 1967 is shown in Figure 20-6 in Chapter 20, Volume 02.

Japan had a strong influence as well, due to its role as an early adopter and diffuser of Western planning concepts through its imperial ambitions in Asia. The main institutions and legislations related to planning and to the implementation of housing had been founded following their Japanese counterparts during colonial times[17]. Furthermore, the development, modernization and economic growth of Japan after World War II through developmental policies and the ensuing urbanization process were strong references for the four Asian tigers[18], due to the common issues of late urbanization, explosive demographic growth, limited land, etc. In particular, the development of new towns by the Japan Housing Corporation's (JHC) during the 1960s and 1970s; the adaptation of the neighborhood concept to denser urban environments and their evolution to the living zones; and the arrangement of linear systems of growth became very influential in South Korea.

The second phase, in contrast, belongs to what Ward characterized as 'synthetic innovation', where ideas borrowed were not only adopted, but were also creatively hybridized with other ideas and practices. This generated new hybrid innovations distinctive enough to count as contributions to the international exchange of planning ideas and are available to be borrowed by other countries (Ward, 2000).

This particular mode of diffusion of modern urban concepts has influenced the planning discipline, the implementation of mass housing, and the understanding of what a modern city is in the context of South Korea. The four points developed below characterize the urbanism of mass housing in Seoul based on this diffusion:

17 Such is the case of the Chosun Housing Corporation (조선 주택 공사) founded in 1941, the same year as the Japan Housing Corporation (JHC).

18 Hong-Kong, Singapore, Taiwan and South Korea.

A. A Modern Urbanism Focused on Techniques Rather than on Theory

In a recent article published in occasion of the first Seoul Biennale of Architecture and Urbanism (which took place during the Fall of 2017), theorist Pai Hyungmin differentiated modern architecture in South Korea from its Western counterparts: *"Korea's modernity was and is of a different kind from the West and the same must be said of its architecture. […] the consistencies in Korea's contemporary architecture emerge from the conventions of everyday living, systems of industrial production and topographical conditions, rather than any particular institution or architectural tradition"* (Pai, 2018, p. 9). According to the author, this difference is due to a series of events that started with the abrupt conclusion of a long-lasting building tradition due to the Japanese colonization. While colonizers introduced the modern concept of architecture, *"…little effort was put into the productive assimilation of modern architecture"* (Pai, 2018). The Korean War (1950-53) and the poor economic conditions after the conflict further delayed the beginning of a modern Korean architecture. It would have to wait until the developmental regime of General Park Chung-hee (1961-79) embarked on an aggressive process of industrialization, development and urbanization. This modernization process was not based on the mechanisms of the free market and technological innovation, but on strong state guidance of the capital. Within this context, architecture was subordinated to the construction industry, a bustling sector that represented more than 20% of the country's GDP (Pai, 2018).

The article makes clear that modern architecture in South Korea has not depended on a particular institution, tradition or technological innovations (i.e. 'theory'); but rather on practical and apparently mundane issues such as everyday life, systems of industrial production, and adaptations to topography (i.e. 'problem-solving'). This pragmatic approach to modern architecture as a source of methods to deal with new urban problems was driven by its subordination to the construction industry, and linked to a larger project of modernization led by the state.

The focus on pragmatic solutions rather than on the theoretical foundations that supported them was also a consequence of the particularities of the diffusion of modern planning concepts and methods exposed earlier, as well as on the context of South Korea at the time. 'Undiluted borrowing' is characterized by the focus on practical experience with little to no concern for theory. In the case of South Korea, the challenges of urban congestion, critical housing shortage, lack of infrastructures to support accelerated development forced by the state, shortage of financial resources, and the lack of expertise in the planning discipline instilled a sense of urgency[19]. This discouraged large-scale visions and favored instead a problem-solving attitude that promoted the adoption of tried and trusted solutions validated from previous experiences abroad. Examples are the preference for urban plans with lot subdivisions that facilitated sales rather than any other considerations, as it was the case in the planning of the open ports at the end of the 19th century[20]; or the rejection of architect Kim Swoo-geun's plan for Yeouido in favor of an alternative which favored financial feasibility by catering to the marketability of the lots to private developers[21].

Another aspect of this focus on planning techniques rather than on the ideologies behind lies in what Carola Hein calls *'the issue of ideology in the importing and exporting of urban planning'*, especially in regards to Japan and its area of influence (Hein, 2003, p. 77). According to the architectural historian, modern Japanese planning developed as a discipline subordinated to the technocrats in the central government. The particularities of Japanese cities (mainly, the need for rapid reconstruction after war or natural disasters and the constraints of land ownership and building codes) made difficult the implementation of Western-style, large scale comprehensive urban plans; strong planning interventions; or the integration of urban and architectural design. The discipline focused instead on planning tools originally borrowed from the West – such as the land readjustment method – and particular projects in order to shape the city, rather than on ideology. That is why planning was considered to be a technical discipline closer to engineering than to the architectural profession (Hein, 2003, p. 66), a notion that would be carried on in Korea during the developmental period. Finally, the author goes on to explain it was precisely the stripping of ideology from western models in the development of a modern Japanese planning discipline what made it so attractive to other Asian countries. Without an ideological background, *'Pragmatic planning in contrast to urban design hence becomes a technical means to be exported without hesitation'* (Hein, 2003, p. 78), particularly in post-colonial settings. The range of planning techniques described in Chapter 15 exemplifies this preference for tools rather than for ideology.

B. A Disconnect Between Spatial References and their Social Underpinnings

Related to the previous point, the development of the urbanism of the *apat'u tanji* as a standardized methodology was characterized by overlooking the social goals of the elements borrowed, focusing instead on their spatial attributes. This is clearly exemplified by the adoption and development of Clarence Perry's theory of the neighborhood unit in South Korea. With the formulation of the concept, Perry's ultimate goal was the building of community spirit, in reaction to the loss of the *'face-to-face associations which characterized the old village community and which the large city finds it so difficult to re-create'* (Perry, 1929, p. 23). This loss was due to the urban growth brought by industrialization and to the advent of the automobile and the infrastructures it required. The American planner and sociologist regarded technical and spatial aspects as subservient to that community idealism. When the concept was introduced in Japan through the work of Nishiyama Uzō and Takayama Eika in designing Senri New Town in the 1960s[22], a similar focus on fostering a sense of community was maintained

19 See quote by Sohn Jung-mok at the start of this section.

20 See '8.5 The urban block as a unit of development' in Chapter 8, Volume 01.

21 See '3.5 Yeouido plan, 1969' in Chapter 3, Volume 02.

22 See '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 1.

and even expanded as a hierarchy of social units at different scales, from the district to the city – an idea developed earlier by British planners in the new towns planned after the war (Lu, 2006, p. 372).

The power of Perry's articulation of the neighborhood unit, and the reason it has been adopted so widely across different cultures, relies on how it determined the size of a community as the critical mass needed to sustain an elementary school. Perry gave form to this social body by defining a safe walkable distance for children as a radius around the school. By complementing that with the amenities needed on a daily basis, the formula not only managed to relate space with the social relationships that sustained it, but it also estimated an ideal population density and the necessary provision of amenities. The reasons for the adoption of the neighborhood unit concept in South Korea, especially since the Jamsil New Town project of 1974, were related to its practical applications as a method to establish the sizes of blocks, the layout of the streets and the provision of amenities, rather than on its original social objectives. Architecture historian Jung Inha noted *"In Korea, the technical aspect was accepted as a useful tool for city planning, but less so the social. The reason was that Korean cities changed so rapidly that the idea of creating neighbors did not mean a great deal to Korean planners"* (I.-h. Jung, 2013, p. 60).

A similar detachment between the spatial definition of a borrowed concept and its social foundations took place with the concept of 'new town'. As explained earlier[23], Ebenezer Howard's original Garden Cities were not only a spatial model, but also a socio-political and economic one as well, since the author's goal was to propose an alternative model to capitalist civilization. In his vision, the Garden Cities would be self-managed as social cooperatives by their residents. Of course, this detachment between the original concept and its actual adaptation did not happen only in South Korea. It was rather the consequence of the long history in the international diffusion of the idea.

Another example of this disconnect between form and its original social content is the idea of mass housing itself. Modern urbanism emerged in industrializing western cities at the end of the 19th century as a response to the consequences of the Industrial Revolution, and one of its main topics would be housing for workers (Habermas, 1989, p. 419). According to Solà-Morales, *'The housing development became the protagonist of urban growth on the new scale'* (de Solà-Morales, 1989, p. 7). These housing developments were meant to address the poor living conditions of the working classes, or *'housing for the greatest number'*. But in South Korea during the period of study, social policy has favored economic expansion rather than social rights, and mass housing has been used to promote access to housing ownership for the middle class, rather than as a form of public housing. The two photographs in the double page that opens Section 1 in Volume 01 and the accompanying text[24] reflect this contrast between the globalization of housing forms in spite of the radically different social meanings in their respective contexts.

The detachment of formal models from the socio-political context that originated them has been a recurrent strategy in the homogenization of the diversity of modern architecture and urbanism into a specific model since the 1930s. Key examples were the exhibition *'Modern Architecture: International Exhibition'* held at MoMA in 1932, which simplified the heterogeneity of modern architecture into a unified style (Crinson, 2012); or the appropriation and reinterpretation of the conclusions of CIAM 4 (1933) by Le Corbusier under *'La Charte d'Athénes'* , ten years later[25] (van Es et al., 2014). The homogenizing intent of these propagandistic efforts was geared towards the universalization of the urban model, in parallel with the hegemonic assumptions of the Western program of modernity.

23 See '8.8 The idea of the New Town' in Chapter 15, Volume 01.

24 See Figure B-1 and Figure B-2 in Section 1, Volume 01.

25 See '21.1 Modern Architecture and Urbanism, Between the Universal and the Individual', in Chapter 21, Volume 01.

C. Multiple Modernities

The equivocal relationship between South Korea and modernity remains a constant background theme of this research. A few fragments that illustrate this relationship are included below (the highlights are not in the original documents):

- *"Although **modernization** began more than a century later in Korea than it did in the West, it has been **the predominant ideology throughout the past century**"* (I.-h. Jung, 2013, p. xi).
- *"Koreans have never stopped yearning for **modernization**. For this reason, recognition of **modernity as a primary goal of Korean society** must be included in any analysis of Korea's history in the twentieth century"* (I.-h. Jung, 2013, p. 3).
- *"For decades driven by a self-conscious sense of backwardness and an **anxious pursuit of modernity**, it* [Korean contemporary architecture] *continues to move as a creative mechanism of unstable knowledge and practices"* (Pai, 2018, p. 9).

Two distinct features stand out from this brief collection of quotes by renowned contemporary Korean architectural critics. First, the assertion of modernity as the primary goal of Korean society, to the point that it is seen as an ideology in itself. Second, the apparent interchangeability of the terms *'modernization'* and *'modernity'*. While an in-depth discussion of the differences among the two lies beyond the scope of this research, it is important to establish clear distinctions:

- **Modernity** refers to a new awareness of the world and of the position of humankind in it, resulting from of the adoption of rational discourse since the Enlightenment period. By extension, it also encompasses the scientific and industrial revolutions it triggered, together with their ongoing impact on all fields of human experience, above all in culture, institutions and politics.
- **Modernization** refers strictly to technological advancement and the economic progress brought by modernity. It involves industrial and scientific progress and the reorganization and rationalization of production and administration, without considering their cultural or political impacts.

While in the countries where modernization originally took place there was a cultural setting that supported it, as well as cultural and socio-political changes brought by this progress, the adoption of modernization in other contexts did not necessarily imply the blind acceptance of the original cultural framework that made it possible, nor of its cultural and socio-political impacts (Buntrock, 1996).

Sociologist Shmuel N. Eisenstadt developed the idea that *"modernity and Westernization are not identical; Western patterns of modernity are not the only 'authentic' modernities, though they enjoy historical precedence and continue to be a basic reference point for others"* (Eisenstadt, 2000, p. 3). Against the general discourse of the classical theories of modernization, which assumed that *"the cultural program of modernity as it developed in modern Europe and the basic institutional constellations that emerged there would ultimately take over in all modernizing and modern societies"* (Eisenstadt, 2000, p. 1), he introduced the concept of 'multiple modernities', or 'multiple interpretations of modernity' to describe the *"multiplicity of cultural and social formations going far beyond the very homogenizing aspects of the original version"* (Eisenstadt, 2000, p. 24) in modernizing societies, which explain the contemporary world *"as a story of continual constitution and reconstitution of a multiplicity of cultural programs"* (Eisenstadt, 2000, p. 2).

Thus, assimilating modernization – as technological and economic progress – with modernity – as a wider civilizational context – or establishing modernization as a goal and an ideology in itself is actually a way to void the assumption that modernization will eventually lead to similar cultural and political shifts as in the original modernizers. It opens up the door to different consequences, and thus to different modernities.

D. Multiple Modernities as a Field of Research for Architects

Rem Koolhaas has embraced the 'failure' of the modern urbanization project to produce a unified and homogenized model, claiming the alternative built results as an actual field of research and experimentation for architects:

> *"[…] the image of the modern city - at least as it was projected - has nowhere been realized. The city that we have to make do with today is more or less made of fragments of modernity […]. But I wouldn't cry over this failure: the resulting strata of neo-modern, which literally negates the traditional city as much as it negates the original project of modernity, offers new themes to work with."*
>
> (Koolhaas, 1989)

Koolhaas called 'suspension of judgment' this change of sensibility towards the as-found condition of the contemporary city without ideological preconceptions or stylistic judgments. Suspending judgment was a way for the architect to come to terms with the hegemony of the consumer society in daily life since the 1980s, an issue the discipline tended to exclude. This different ethics of perception placed the profession in a position to engage with reality and expanded the scope of action for architects (Druot, Lacaton, & Vassal, 2007, p. 15).

9.2 MASS HOUSING AS 'PACKAGES OF HOUSING' RATHER THAN PARTS OF THE CITY.

Over the forty-six years encompassed in the research period, *apat'u tanji* played diverse roles in terms of the population they were targeted to; their financing; their role in the provision of welfare[26]; their location within the city; and whether they were used as a tool for urban extension, colonization of the metropolitan area or inner city renewal.

The location of mass housing estates during the years of fast urban growth did not respond to a larger urban vision capable of structuring these new developments and their relationship to the existing city and to the natural support. Instead of being planned in anticipation, mass housing estates were used as a quick fix to the looming housing shortage. Their distribution was determined by the availability of buildable land, housing policies at national level, and economic profit rather than by the needs and characteristics of the city, its territory or other structures of growth (Sohn, 2003). This is particularly evident in the lack of planning of a significant network of open spaces, in the lack of integration of natural features such as the hydrological network and the topography, or in the ambiguous location of *apat'u tanji* in relationship to mass transit. Of course, there was planning beyond the scale of the individual estates. The planning of Jamsil in 1974 introduced the concept of 'new town', understood as an urban framework for the development of mass housing, segregated from the old city. Since the early 1980s, the planning of Gwacheon, Mok-dong, Sanggye, Gaepo-dong and Godeok-dong generalized this strategy for urban growth in self-contained assemblies of mass housing organized around common facilities[27]. They were different from their British references in that they were

26 See '1.3.1 Private Management of the Implementation Compared to Other East Asian Developmental Counterparts' in Chapter 1, Volume 01.

27 See '7. The Whole-Hearted Adoption of Mass Housing Lead to the Planning of New Towns in the Undeveloped Frontiers of the City (1980s)' in Subchapter '7.2 Roles of Mass Housing in the Different Plans for Seoul', Chapter 7, Volume 01.

urban extensions rather than developments *ex novo*, and were not intended to be self-sufficient but rather bedroom communities. In spite of their scale, they were still isolated fragments within the metropolis.

Thus, even though a*pat'u tanji* held – and still hold – a high symbolic value as heralds of a new modern lifestyle and as an icons of social status, from the point of view of their integration within the larger urban structure or the metropolitan territory, mass housing has been addressed only from a quantitative point of view limited to the provision of housing units. In spite of evident differences in scale, this situation does not differ from the implementation of mass housing in many western countries after World War II. For instance, one of the conclusions from Amador Ferrer's thesis about the significance of the mass housing estates built in Barcelona between 1950 and 1975 on the physical transformation of the city has a familiar ring to it: "*The urban location* [of the mass housing estates] *does not respond to any guidelines previously thought out in a coordinated way. There was no criterion as to the size of the promotions or their densities. However, fundamentally, the estates did not contribute to the formation and organization of urban space. They were always planned as isolated operations, closed to their own goals - limited to offering a number of housing- and lacking coordination with other processes of urban growth. It is possible to conclude, therefore, that the estates were rather 'packages of housing' than 'parts of the city'*[28] " (Ferrer, 1996, p. 20). The names of populist housing campaigns such as the *'Two Million Housing Construction Plan'* (주택 200만 호 건설 정책), launched by the newly elected President Roh Tae-woo in 1988 and fulfilled only within three years show the importance the quantitative provision of housing had at the time.

The failure to undertake bold planning measures in order to address both the housing crisis and the inevitable growth of Seoul through an urban vision capable of guiding land development towards a modern city constitute a missed opportunity to establish the foundations of an autochthonous urbanism. There have been cases of cities where the need for fast development in the face of disaster or a major demographic crisis during their modern urbanization has been instrumentalized as an opportunity to amend past shortcomings and to layout new urban visions capable of setting up a course for the future and a local *modus operandi*.

The reforms of Tokyo after the Great Kanto Earthquake of 1923, or the Greater London Plan by Sir Leslie Patrick Abercrombie after World War II are particularly relevant, since they have been used as references for the planning of Seoul at different times (Choe, 2003, p. 497; S.-h. Jung, 2014, p. 3). The 1930 master plan for Frankfurt developed by Ernst May and his collaborators is a clear example of an urban plan where new areas of mass housing (or *siedlungen*) were integrated within the overall structure of the city. Those housing districts were located around the historical center, but separated from it by green areas and agricultural land acting as buffer zones (see Figure 9-1). Each new residential area was self-sufficient in terms of amenities and services, and they were linked to the old city through a network of radial avenues (see Figure 9-2). The plan featured an important continuity with the historical city, but at the same time proposed a new urban model through the careful arrangement of the new mass housing districts, capable of directing the growth of the city in the years to come (Sáinz Guerra et al., 1995, pp. 38-39).

The reasons for this missed opportunity to capitalize on the need for fast urban growth to put forward a new model come from a combination of multiple factors:

- The sheer scale of the housing shortage[29].
- The lack of financial resources of the administration, especially in the first decades after the Korean War (1950-53).
- The shortage of planning experts in the first decades after the Korean War (S.-h. Jung, 2014, p. 4).

28 Translated from Catalan by the author.

29 See Chapter 4, Volume 01.

- The lack of public land for the development of public housing.
- The confronting agendas of the central and local governments in terms of policies for dealing with the concentration of population in the capital[30].
- The dual nature of the planning legislation and its difficulty in leveraging long-term visions with real world need for adaptability[31]. While Statutory Plans were meant to guide long-term development, they were too slow in responding to the abrupt changes and demands of the housing market. They also depended on the central government, so they were tied to its population decentralization policies up until the end of the 1970s. On the contrary, Non-statutory Plans were more flexible, but at the same time were tied to municipal governments and their electoral terms, so were limited in ensuring long-term viability.
- The increasing role of the private sector in the provision of mass housing emphasized the profit-seeking aspect of development and divorced it from the planning of urban space.

These dynamics favored short-term economic and political decisions based on practicality and efficiency from a problem-solving standpoint, rather than on long-term incremental urban development, ecological sustainability, and social feasibility. They also consolidated into the common practice of adopting already tested solutions over experimentation (I.-h. Jung, 2013, p. 55; S.-h. Jung, 2014, p. 12; Sohn, 2003, pp. 279, 291).

9.3 MASS HOUSING AS A STANDARDIZED TECHNOLOGY FOR CITY-MAKING

The implementation of mass housing in Seoul during the period of study (1962-2008) did not correspond to a unified criterion in terms of their location, their relationship to the existing city and the natural context, and their interaction with other structures of growth such as infrastructures, urban extensions or other housing estates. Instead, mass housing was used as a quick fix to the escalating housing crisis, and decisions were based on short-term economic profit, availability of land and geo-strategic military policy, among others. In order to fulfill the increasing demand – especially since the transition to private development and the generalization of apartments since the end of the 1970s – a series of planning and architectural processes, strategies and formal models were gradually borrowed and adapted from abroad.

Due to the country's modern history, mass housing was introduced in South Korea much later than it had in European countries, Japan, or even in other developmental states such as Hong Kong or Singapore. This means that a wide variety of tried and tested tools and expertise were already available through the global knowledge transfer of modern architecture after post-World War II reconstruction (Lu, 2006). Through a process of trial and error, over time these tools based initially on borrowings from other places became assembled into a set of practices validated from experience. They consolidated the urbanism of *apat'u tanji* into a technology that standardized city-making, based on a balance between the demands of the market and the economic profit of the private developers involved, with the consent of the administration.

30 See '5. The Conflicting Agendas of the Central and the Local Governments Prevented the Full-Fledged Implementation of Mass Housing (1970s)', in Subchapter 7.2, Volume 01.
31 See '7.1 Visions for Seoul: Statutory Plans versus Non-statutory Plans' in Chapter 7, Volume 01.

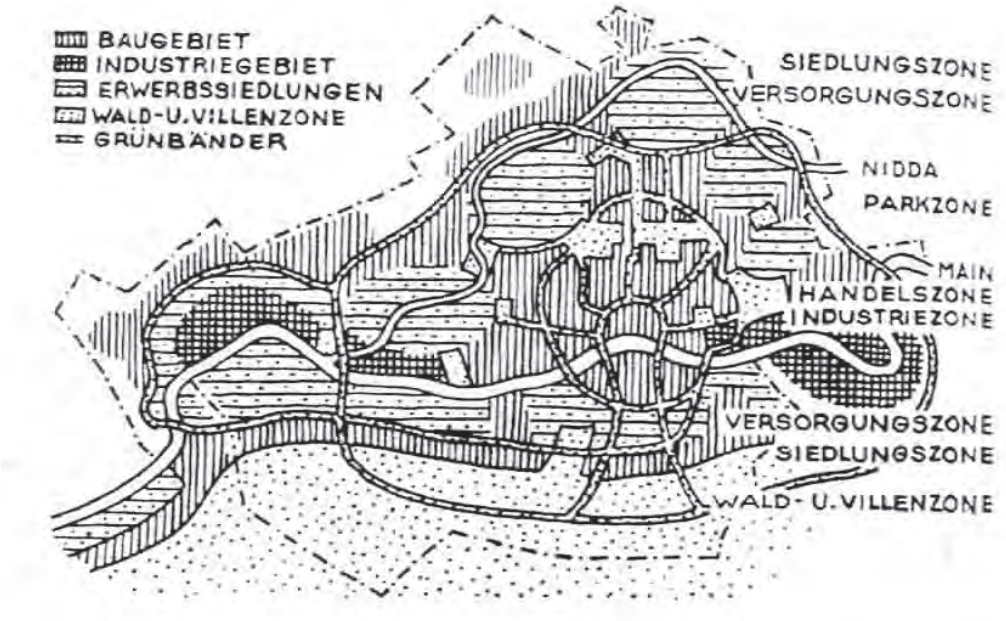


Figure 9-1. Diagram of the green buffers proposed between the traditional city and the new housing areas in the periphery of Frankfurt.
Leberecht Migge, landscape architect. Frankfurt master plan, 1930.

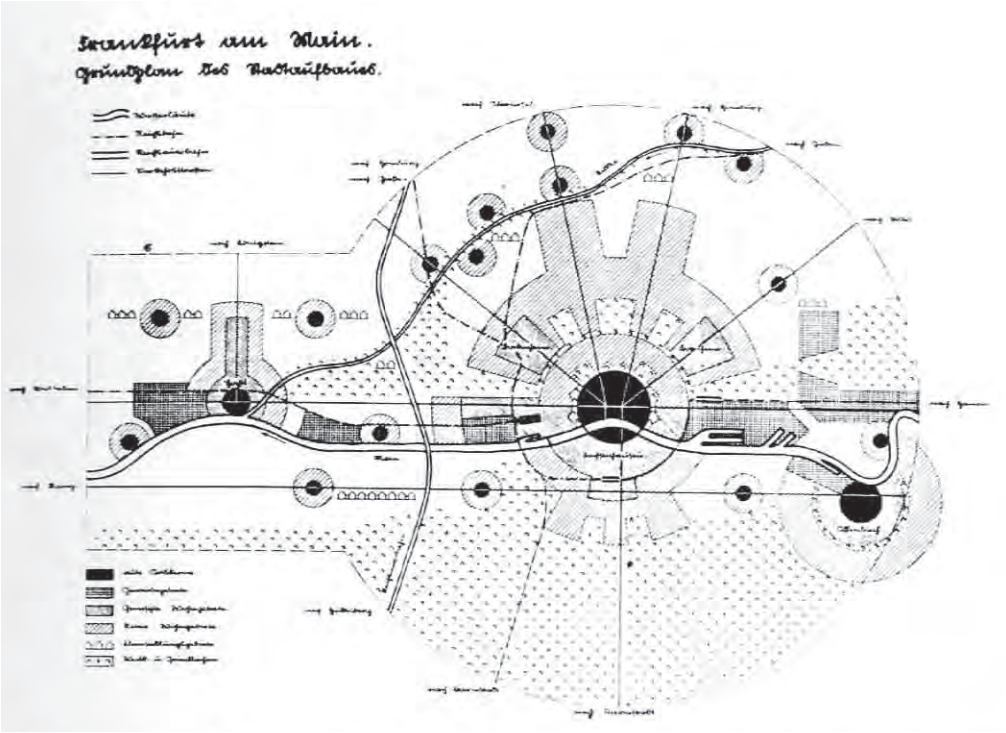
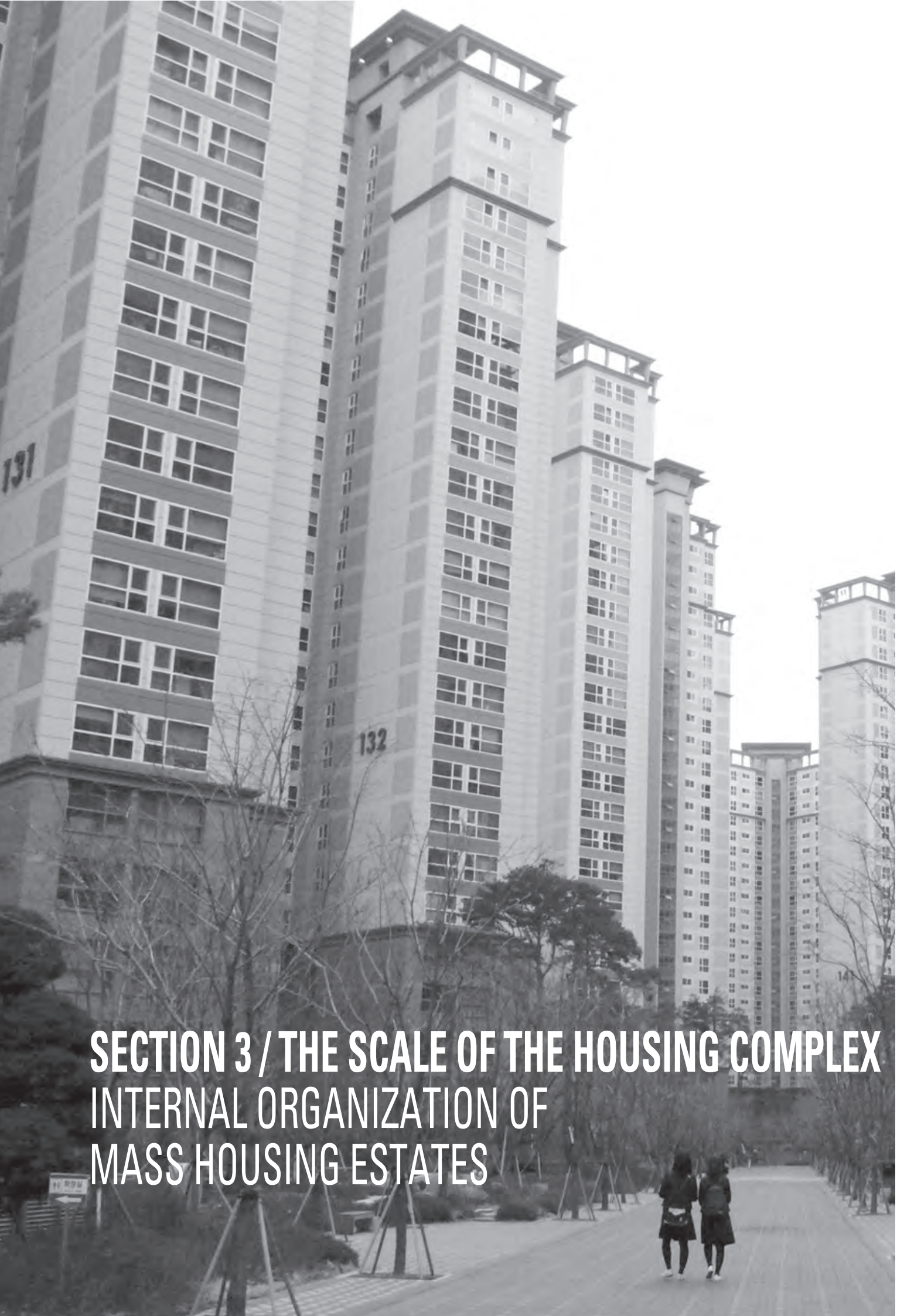


Figure 9-2. Diagram of the master plan for Frankfurt featuring radial avenues connecting the center with the new housing developments in the periphery.
Ernst May and collaborators. Frankfurt master plan, 1930.

These planning and architectural processes, strategies and formal models are:

- Tabula Rasa
- Making artificial land
- Strategies to optimize the acquisition of land for mass housing
- Street grids as frameworks for urban development
- The urban block as a unit of development
- The neighborhood unit and its evolution to the 'living zone' theory
- Linear structures of growth
- The idea of the 'New Town'

They could be implemented together in an integrated way or selectively, depending on particularities of each site: scale of the development, location and whether they were used in a project of urban extension, inner city renewal or as part of a new urban entity developed from scratch.



SECTION 3 / THE SCALE OF THE HOUSING COMPLEX
INTERNAL ORGANIZATION OF MASS HOUSING ESTATES

Figure D-1. Xi Apartments, Banpo, Seoul.
Photograph by author, 2011.

"Korea has been emancipated from the feudal lifestyle marked by the permanence of rituals transmitted from antiquity; on a day like today I am reassured that the adoption of a collective lifestyle, by allowing Koreans to save time and money, will help improve the living conditions and the culture of the people."

General Park Chung-hee (1964) Inaugural speech for the Mapo apartaments. Quoted in Valérie Gelezéau (2003) *Séoul, ville géante, cités radieuses.*

"The phenomenon of universalization, while being an advancement of mankind, at the same time constitutes a sort of subtle destruction, not only of traditional cultures, which might not be an irreparable wrong, but also of what I shall call for the time being the creative nucleus of great civilizations and great culture..."

Paul Ricoeur (1961) 'Universal Civilization and National Cultures', quoted in Kenneth Frampton, *Modern Architecture. A Critical History.*

"Tous les utopies sont déprimants car ils ne laissent pas de place au hasard, de la différence, pour le «divers». Tout a été mis en ordre et l'ordre règne. Derrière chaque utopie il ya toujours quelque grand dessein taxinomique: une place pour chaque chose et chaque chose à la place."

Georges Perec (2003) *Penser / Classer*. Seuil (pp. 156).

SECTION 3 / THE SCALE OF THE HOUSING COMPLEX
INTERNAL ORGANIZATION OF MASS HOUSING ESTATES

The third section focuses on the scale of the housing estates. The aim is to find out whether the development of *apat'u tanji* has yielded original morphological contributions to the wider field of mass housing. This is done through the graphic analysis of twelve case studies, which have been redrawn. The process of re-drawing implies a homogenization of the original information in order to allow for comparisons and thus exposing possible evolutions, wild cards and changes in trends. Case studies are not used as groundwork to verify previous theoretical foundations –the goal is to produce new knowledge through their representation and comparison.

STRUCTURE AND METHODS

The twelve cases were chosen according to a double selection criterion: each one of them had to pioneer at least one innovation which influenced later developments; and together they had to cover the whole spectrum of phases established in Section 2.

The cases were investigated according to a selection of topics which characterize *apat'u tanji* in Seoul. Section B in Volume 02 dedicates one chapter to each case study as a comprehensive unit of research, whereas each chapter of the present section compares the cases according to each one of the research topics employing the format of a timeline based on the phases determined in Section 2 in Volume 01, in order to draw conclusions.

- **Chapter 10 - Planning Background:** this category establishes a link between the urban dimension of housing estates and their internal logics. The comparison of an aerial photograph of each site before construction including the parcels with a drawing showing the residential footprint proposed reveals the strategies for the location of the different sites within the city; their relationship to the pre-existences; their relationship to larger urban plans; and the size of the lot.
- **Chapter 11 - Internal Organization:** a series of simple plan diagrams synthesize the main features of the site planning of each *tanji*. The evolution of those strategies reflects a quest for optimizing the layout of the site in order to achieve a difficult balance between higher residential density and better quality of space. The diagrams reveal how that is pursued through strategies for the arrangement of the buildings, layout of the circulations, and provision of open space. Other issues featured are the treatment of the perimeter and the location of commercial facilities within the complex. Later complexes featuring tall buildings show schemes in section to show how sectional characteristics are taken into account.
- **Chapter 12 - Clusters:** an eye-view axonometric drawing of each housing complex is complemented with an aerial perspective of a typical unit of aggregation of residential buildings. The goal is to determine whether the design intended to support the formation of communities within the larger complex. The three-dimensional character of the drawings conveys the spatial quality of those aggregations and the elements that contribute to it. The case studies in Volume 02 also feature two sections throughout the site to show how

the aggregations are arranged accross the parcel.

- **Chapter 13 - Uses of open space:** through colored plan diagrams, this category makes evident the amount of area dedicated to open spaces, as well as their degree of specialization and sophistication. It also traces the gradual adoption of strategies for the separation of pedestrian and vehicular flows.
- **Chapter 14 - Definition of open space:** this topic complements the previous one with a focus on the spatial strategies devised to define and articulate open space from a qualitative point of view. Eye-view axonometric drawings outline the spatial enclosures of the open spaces provided and reveal their degree of integration with the rest of site planning strategies. They are complemented with a sequence of eye-level views which portray the spatial experience afforded by the articulation of those open spaces.
- **Chapter 15 - Circulation networks:** diagrams in plan show access strategies, internal circulation layouts, and parking strategies.
- **Chapter 16 - Commercial facilities:** the provision of basic daily needs characterizes the housing estates in Seoul. This segment investigates the development of commercial building types through exploded axonometric drawings which show the location of commercial facilities within a building in case they are combined with other uses; access strategies; the arrangement of the different commercial units; the structure of the building; and the building envelope.
- **Chapter 17 - Residential building types:** the comparison of building plans at 1/400 scale and sections at 1/200 scale highlighting access strategies, outdoor spaces, kitchens, structural elements and internal partitions allows to trace the evolution of residential typologies in the pursuit of higher residential density and more efficient construction systems. They also reveal the impact of technical innovations on lifestyles and interactions among neighbors by shaping the internal layout of the units and shared accesses.
- **Chapter 18 - Boundaries:** *apat'u tanji* are intrinsically bounded urban entities. The definition of their boundary is addressed at two scales: as an urban condition shaped by external conditions such as topography, surrounding street layouts, etc., and in terms of the treatment of the edge as a design feature internal to the complex. The impact of the urban condition is shown with an eye-view axonometric diagram, and the materialization of the edge condition is expressed through a 1/500 scale section.
- **Chapter 19 – Land use diagrams:** in spite of their partiality, land use diagrams offer a synthetic approach complementary to the previous ones. They portray quantitative data in terms of ratios of areas but not qualitative aspects about how those areas are organized, the relationships between the different parts, or the quality of the spaces generated. They are assembled in three main groups: built footprint, open space, and circulations and parking.

Chapter 20 offers an interpretation of the findings from the previous chapters by outlining three phases in the evolution of the design of mass housing complexes in Seoul, based on Ward's typology of the international diffusion of planning ideas (Ward, 2000), which has been used as a reference as well in Section 2. Two research topics included in Section B in Volume 02 are not shown in this section –'Unit Plan Layouts' and 'Tactics of Appropriation by Users'-, since they are better suited to illustrate some of the aspects discussed in Section 4.

CHAPTER 10
APAT'U TANJI CASE STUDIES: PLANNING BACKGROUND

The planning background serves as a bridge between the urban dimension of *apat'u tanji* discussed in Section 2 and the current section, which deals with their internal logics. The study of the twelve cases[1] makes evident that the adoption of mass housing in Seoul over the period of study was not a straightforward process. On the contrary, the strategies for their location in the city; their relationship to the pre-existences; their linkage to larger urban plans; and the sizes of the lots all changed considerably during the period, reflecting some of the conclusions from Section 2: City Scale[2].

The most recurrent issues found are:

- The evolution of the types of sites dedicated to mass housing, their location in the city and their original ownership.
- The gradual definition of an ideal parcel size, in consonance with the larger road network.
- The shift in the urban role of mass housing - whether they were used for urban extension, colonization of the metropolitan area, or inner city renewal.

Which are elaborated below:

10.1 TYPES OF SITES / LOCATION / OWNERSHIP

The Mapo Apartments of 1962 were a pilot project meant to demonstrate the modern urban lifestyle and to introduce new construction technologies to support it. The site chosen to build them had a strong historical significance as it had been the location of a Japanese colonial prison. The symbolic intention was clear: to transform a site of colonial oppression into the showcase of a modern urban Korea. Because it was already owned by the government and it was large enough, it did not require complex processes of acquisition of land from different owners, so no larger planning was involved. At this point, the *tanji* was surrounded by the existing city and it was not meant to belong to a larger urban entity within it. At the same time, the original isolation of the prison from its surrounding guaranteed the seclusion of the *tanji* from its surroundings.

Soon with the Hangang Mansion Apartments, *tanji* become part and parcel of a way more ambitious city expansion effort. There were important shifts at two different scales:

- **Urban scale:** mass housing estates were the residential typology chosen to colonize the new territories gained from the river through the massive Han River Development Plan (한강종합개발사업). The regularization of the river bed through embankments prevented flooding and provided a perfect support to build a new mobility infrastructure of highways and bridges along the river, which completely redefined the scale of the old city and the relationship to its

1 See Section B, Volume 02.
2 See Chapter 9 in Volume 01.

surroundings. The extensive land reclamation of the banks of the river also provided cheap public land at a massive scale. See subchapters 5.3 and 5.11 in Volume 02.

- **District scale:** *tanji* were not planned in isolation anymore, but as part and parcel of a group of them. This allowed for the provision of amenities that served all, further developing a modern urban lifestyle by incorporating shared education and commercial facilities, vehicular access, etc.

The experimentation developed during this first period (namely, in the cases of the Hangang Mansion Apartments and the Yeoeuido Sibum Apartments of 1970) was crucial in the second phase of the development of mass housing in Seoul, such as in the case of Banpo (1972) and the planning of Jamsil (1975). This second phase of generalization of mass housing was characterized by five main features:

- The location of Banpo apartments brought an important shift in the direction of growth of the city. Until then growth had followed the train infrastructure built by the Japanese to connect Seoul Station just outside Namdaemun (southern gate) to the port in Incheon, crossing the river at Yongsan. But from now on, development shifted eastwards along the river on its southern bank, following the Han River Development Plan. This spearheaded the development of the south side of the river, and ultimately of Gangnam.
- The scale of the developments increasingly grew since the planning of Banpo.
- This forced the adoption of the 'new town' model in Jamsil[3].
- The size of *tanji* and their relationship to those larger urban plans they belonged to was structured through the layout of street grids of wide avenues which in fact effectively segregated one tanji from the adjacent one[4].
- The planning of big estates along the river on former agricultural land required the eviction of pre-existing villages, initiating an infamous practice which would accompany mass housing since then. Some of those villages can be appreciated in the aerial photographs of the original sites for Jamsil-2 tanji, Apkujeong, and the Olympic Village Apartments. Land readjustment projects were required to redistribute ownership of the land and obtain public infrastructure and services.

The second half of the 1970s saw the transition to the private sector, once apartments had been generalized among the population through the efforts of the Housing Corporation. The Hyundai Apkujeong Apartments of 1975 are an example of this. They were still tied to the Han River Development Project and to the network of avenues structuring the district.

Two projects from the middle of the 1980s signal a change in previous dynamics: once the Han River Development Project had been completed, mass housing began to colonize the southern banks of the river, away from the waterfront. Both the Asian Athletics Village Apartments and the 1988 Olympic Village Apartments were public projects designed through competitions and geared towards showcasing the modernization of the country after two decades of developmental policies. They also intended to drive urban growth through the speculative development of their neighborhoods.

The decade of the 1990s saw the hegemony of private developers, together with a new field of application for mass housing: the renovation of older housing estates. The renovations of the Mapo Apartments and of the Jamsil-2 tanji are cases in point. In them, the location and size of the parcels were fixed, so the new designs had to deal with those constraints and provide higher residential density. The process of land acquisition was simplified to an agreement by the majority of owners. After the 1997 financial crisis and the consequent liberalization of apartment prices, new typologies catering to a growing wealthy sector of the population appeared, as exemplified by the Tower Palace apartments.

3 See subchapter '8.8 The Idea of the New Town' in Chapter 8, Volume 01.

4 See subchapter '8.4 Street Grids as Frameworks for Urban Development' in Chapter 8, Volume 01.

10.2 PARCEL SIZE

The size of parcels for mass housing estates grew until it reached a critical size around 500m. introduced by the superblocks of Jamsil new town. This dimension was intrinsically related to the development of street networks for urban growth[5], and to the application of Perry's neighborhood theory in order to define the right size of a community[6].

Notable exemptions from this trend were the Banpo Apartments, which in spite of its massive size were in fact divided in three sectors with similar modules; the Olympic Village Apartments, which could be considered a double superblock; and the parcel for the Tower Palace, which was originally meant for a different use.

The implementation of street grids to manage urban growth and the use of urban blocks as the basic units of that growth have been discussed in subchapters 8.4 and 8.5 of Chapter 8 in Volume 01 respectively. For an analysis of the dimensional logics of Seoul's grids, please refer to Chapter 5 in Volume 02.

10.3 URBAN ROLE

The urban role of mass housing changed along the period of study, reflecting demographic growth; the evolution of the housing shortage; the different attitudes towards mass housing by the local and the central administrations; and the changing political and economic context, among others. While the Mapo Apartments of 1962 were used as urban infill in a consolidated area, soon *apat'u tanji* were adopted as unit blocks for the extension of the city along the banks of the Han River. That was the case of the Hangang Mansion Apartments and the Yeoeuido Sibum Apartments.

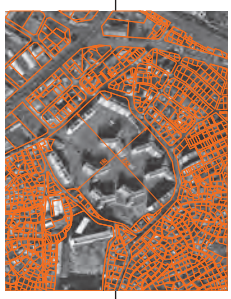
Soon, the direction of development shifted and mass housing spearheaded the colonization of the south banks of the river, with projects such as the Banpo Apartments, Apkujeong Apartments and the *tanji* in the Jamsil. From this privileged position along the river favored by the Han River Development Project, mass housing went on to colonize further urban frontiers, as exemplified by the Olympic Village Apartments. This expansive move would reach beyond the municipal limits in order to establish satellite cities in the metropolitan area, as a measure to alleviate urban congestion and rising housing prices since the late 1980s.

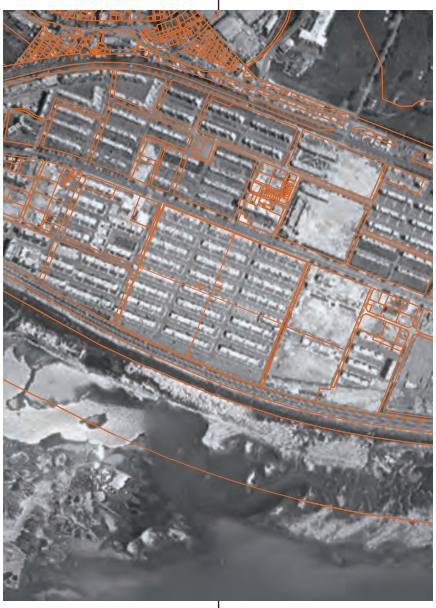
In parallel to this centrifugal motion and reflecting the depletion of buildable land, *apat'u tanji* came back to re-colonize the city through the renovation of either decaying low-rise housing quarters or older mass housing estates. The renovation of the Mapo apartments by Samsung C&T and Jamsil Ricenz Apartments demonstrate that. Chapter 14 in Volume 01 further develops the different roles adopted by mass housing estates during the different phases of the period of study.

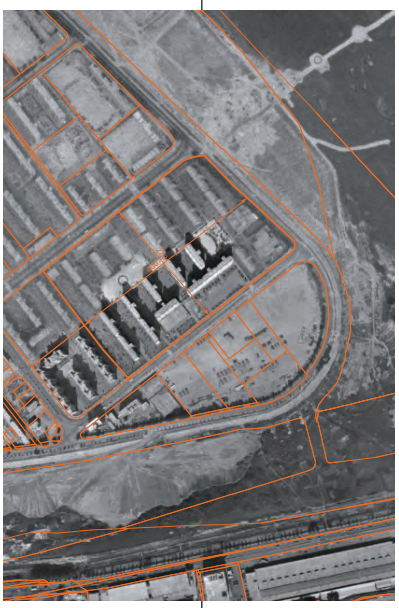
5 See subchapter '8.4 Street Grids as Frameworks for Urban Development' in Chapter 8, Volume 01.

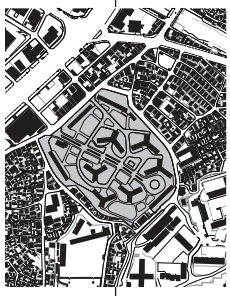
6 See subchapter '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 01.

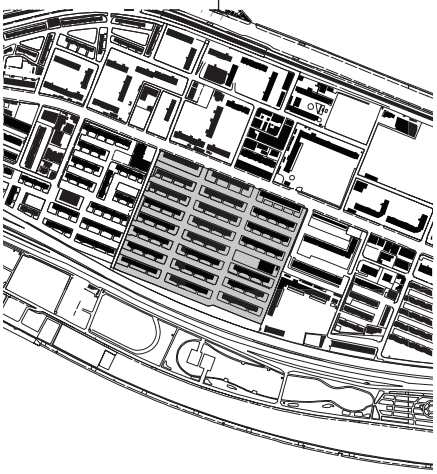
Figure 10-1. Synthesis of planning background from the Case Studies in Volume 02 (I).

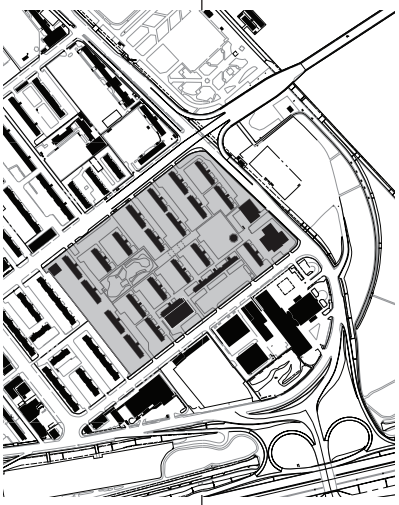












1 /15,000

01/ 1962
MAPO
APARTMENTS

02/ 1970
HANGANG MANSION
APARTMENTS

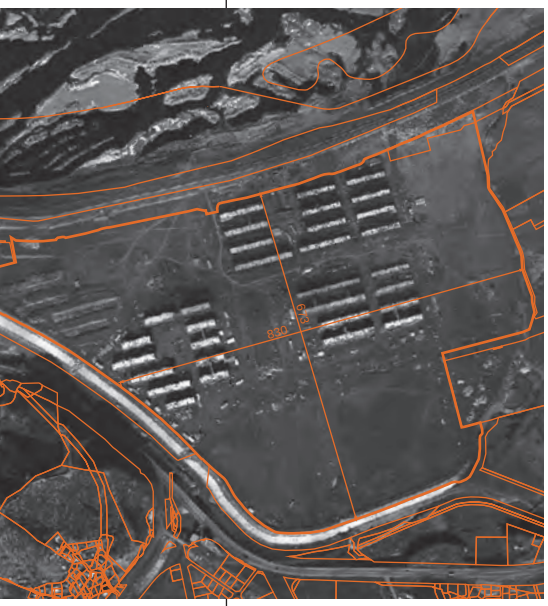
03/ 1970
YEOEUIDO SIBUM
APARTMENTS

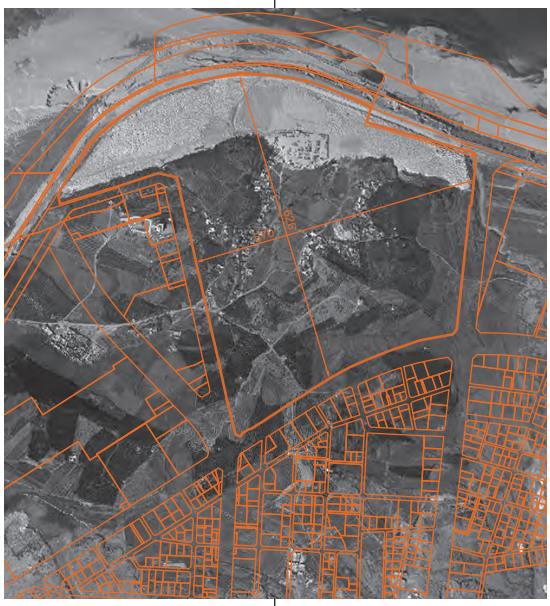
1976

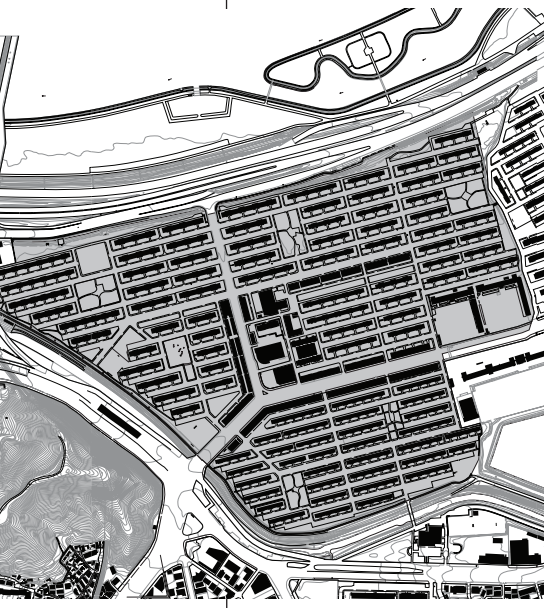
2nd PHASE

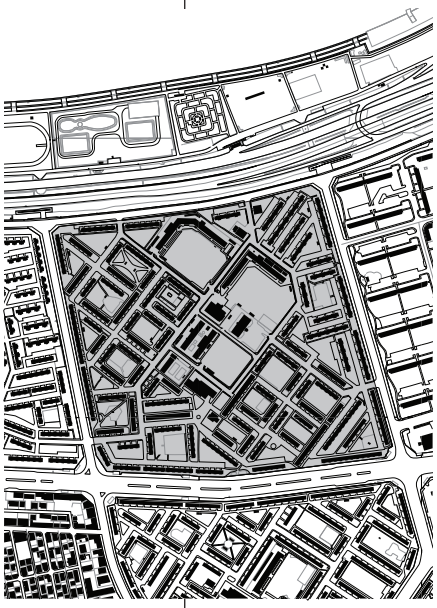
GENERALIZATION OF APAT'U TANJI

TRANSITION TO THE PRIVATE SECTOR









Source of orthophotographs:
Seoul Metropolitan Govenment Aerial Photography Service - *http://aerogis.seoul.go.kr/app/mainfrm/agis.do*

04/ 1972
BANPO
APTS

05/ 1975 JAMSIL
2-TANJI APTS

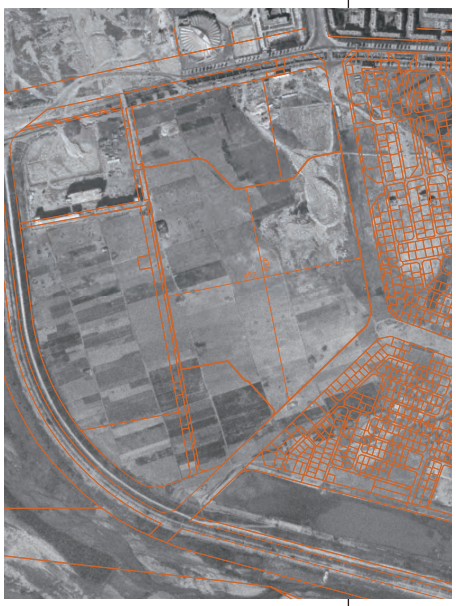
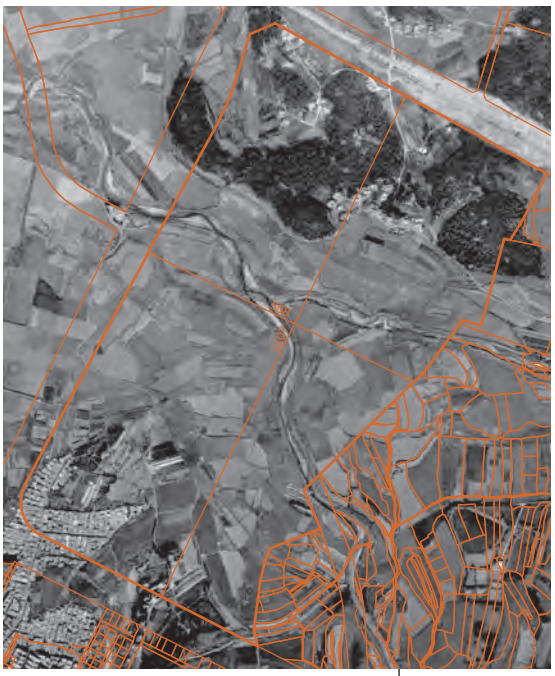
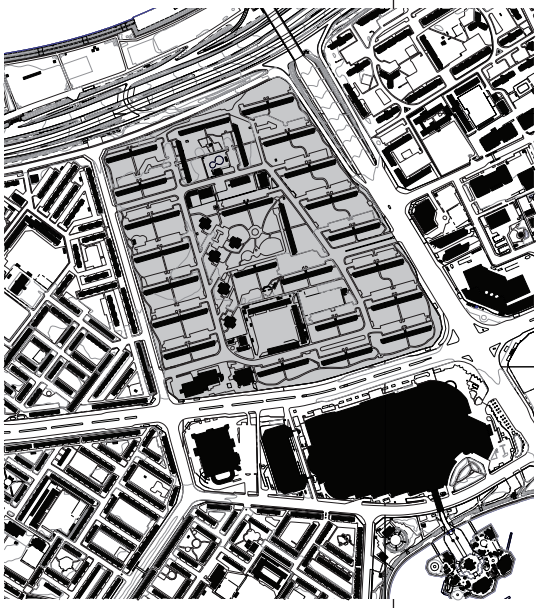
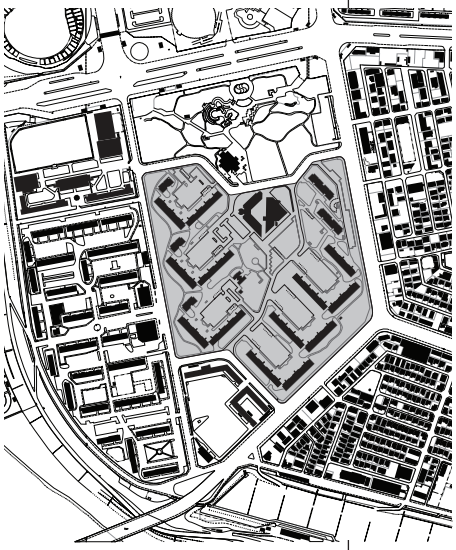
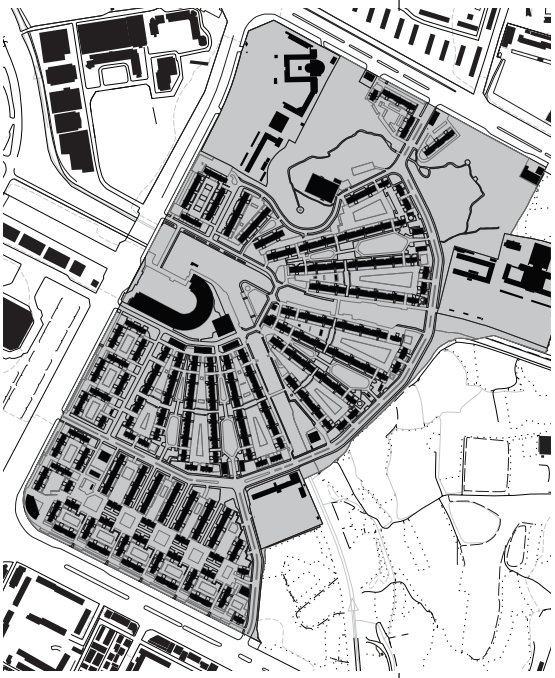
06/ 1975
HYUNDAI
APKUJEONG APTS

07/ 1983
JAMSIL
5-TANJI
APTS

1975

1980

Figure 10-2. Synthesis of planning background from the Case Studies in Volume 02 (II).

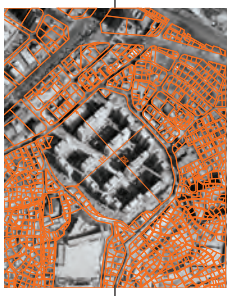
1 /15,000

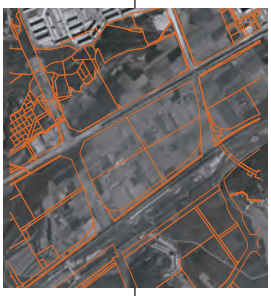
07/ 1983 JAMSIL 5

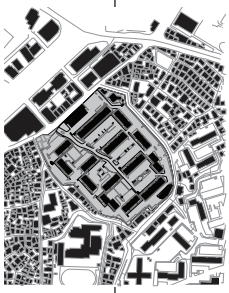
08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

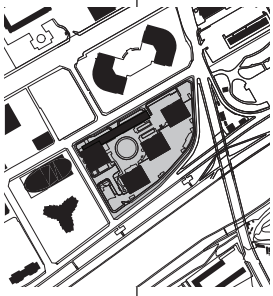
09/ 1986
OLYMPIC
VILLAGE APTS

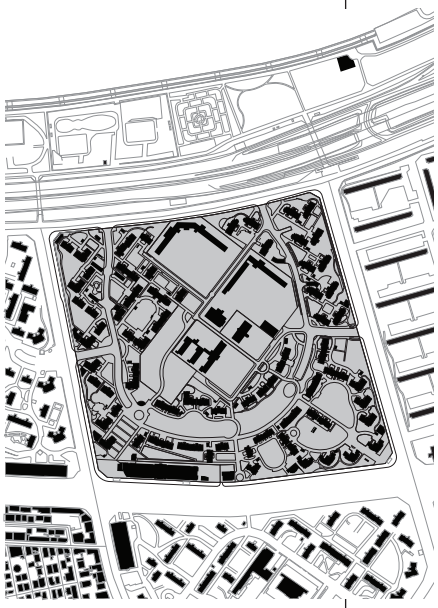
1985 1990 1995











Source of orthophotographs:
Seoul Metropolitan Govenment Aerial Photography Service - *http://aerogis.seoul.go.kr/app/mainfrm/agis.do*

10/ 1993
MAPO
SAMSUNG APTS

11/ 1999
SAMSUNG TOWER
PALACE APTS

12/ 2008
JAMSIL
RICENZ APTS

CHAPTER 11
APAT'U TANJI CASE STUDIES: INTERNAL ORGANIZATION

The main issue the evolution of the internal organization of the case studies considered reflects is a constant quest for optimizing site planning in order to achieve higher residential density. Secondary issues are: the treatment of the perimeter; the location of commercial facilities within the complex; and the separation of vehicles and pedestrians.

11.1 SITE PLANNING

After the experiment with isolated buildings in Y plan of the Mapo apartments, which turned out to be so inefficient they had to be complemented later with linear blocks along the perimeter of the *tanji*, soon the *zeilenbau*, or 'row construction' model was adopted as the default site planning strategy. It was a method for the planning of mass housing developed in Germany in the early twentieth century, based on hygienist concerns. Ernst May and the Frankfurt city officials consolidated the model under the Neues Frankfurt public housing program during the second half of the 1920s, with contributions by renowned architects incorporating studies on natural lighting; perfecting construction methods; optimizing building heights; developing interior layouts; and even rationalizing the modern kitchen. Thus the model was developed into a coherent system operating at different scales, which soon would be adopted around the globe, becoming a universal urban form[1].

In Korea the *zeilenbau* model underwent a critical adaptation. Residential blocks were turned ninety degrees so units would be oriented north-south instead of east-west as in the original, with consequences in the interior layout of the units. Another important adaptation was the incorporation of car parking and the use of the open space in front of the buildings.

1 See 'Zeilenbau' in 'Urban Morphology References', in Chapter 19, Volume 02.

The system became the default site planning mechanism for mass housing throughout the 1960s, 1970s and up to the 1980s, even though it was in constant evolution to provide more housing density by increasing the height and length of the residential blocks. This evolution reproduced the well-known 1930's theory by Walter Gropius' relating building heights, the distance between buildings, sunlight and density of *zeilenbau* layouts[2], a widely-known concept in South Korea during the 1970s[3]. The initial 75-meter long, five-storey tall walk-up blocks of the Hangang Mansion apartments evolved all the way to the 110-meter long, fifteen-storey tall mammoth blocks of Jamsil-5 tanji. They represent the culmination of the *zeilenbau* system in Korea since the uniformity of the monolithic façades, the presence of large swathes of unused open space in between the blocks, the increasing parking requirements, and the evolution of residents lifestyles called for an evolution towards more sophisticated site planning strategies.

The efforts to find alternatives to the *zeilenbau* system during the 1980s were highly influenced by an increasing awareness about the definition of communities within larger residential neighborhoods. This focus on the social dimension of housing stemmed from a growing concern since World War II about the limitations of the universalist aim of modern urbanism and about the need to complement it with a greater recognition for particularities and identity, as exemplified in the discussions about the concept of 'Habitat' and the nesting of scales of planning in the Congrès Internationaux d'Architecture Moderne (CIAM) since the late 1940s[4]. Those discussions fructified in the development of the Japanese new towns since the 1960s, which had a strong influence in South Korea[5]. The Asian Athletics Village Apartments of 1984 and the Olympic Village Apartments of 1986 represent a watershed moment in the development of site planning strategies. Both projects by the Korea Housing Corporation demonstrated original methods to design mass housing based on the definition of clusters as small communities within the larger tanji. This definition of clusters was the main driving strategy of both designs, reinforced by complementary strategies such as the allocation of parking, the separation of cars from pedestrians, the location of commercial facilities, the provision of open spaces at different scales, and even the relationship with the surrounding urban context. At the same time, both projects incorporated references to traditional urban settings such as the topography and the tightly knit communities developed along the alleys as the main form of public space in the old residential quarters of Seoul.

A combination of facts at the end of the 1980s brought a halt to the development of site planning strategies carefully suited to the emerging modern urban milieu of Seoul: the transition to the private sector, the need to increase residential density in order to address the rampant housing shortage, and the incipient renovation of the oldest apartment complexes in Seoul. Developers stuck with tried-and-tested formal solutions developed in the years prior, often disengaged from their original community-building intentions. Thus, in spite of the use of compositions of clusters of buildings, they would not be supported by coherent access and circulation strategies; the provision of common open spaces; or common facilities such as surveillance, parking, garbage collection, etc. That is the case of the renovations of the Mapo Apartments and of the Jamsil-2 tanji.

The Tower Palace Apartments feature a unique site planning strategy independent from the evolution described due to the adoption of the global high-rise condominium typology. The multiplication of residential density with the increase of floors brought to the fore the importance of the section, especially in terms of the need for underground parking floors; the definition of a service plinth; the possibility to locate common amenities in the mid-levels of the towers; and the provision of views as a valuable asset. The Tower Palace and the Jamsil Ricenz Apartments exemplify this trend.

2 See Figure 19-11 in Chapter 19, Volume 02.
3 See Figure 22-9 on page 329, Chapter 22, Volume 01.
4 See subchapters 21.1 and 21.2 in Chapter 21, Volume 01.
5 See subchapter 8.6 in Chapter 8, Volume 01.

11.2 TREATMENT OF THE PERIMETER

A constant in the planning of the case studies was the clear definition of a perimeter. *Tanji* stand in clear distinction to their surroundings. They do not try to become integrated with the existing urban context if there is one, neither they try to blend with contiguous complexes or with the natural environment. Their organization logics remain completely internal and autonomous to the larger street grids or networks of open spaces. The fence built around them consists an act of privatization of the urban sphere, in order to either protect resident's assets such as green spaces, sports areas or parking; to shield their privacy – as in the case of the Tower Palace; or to highlight their social status. In that sense, the choice to build the first mass housing complex of the developmental period in the site of the former prision in Mapo is very telling.

The pursuit of isolation proved to be a strong limitation in *tanji* planned as part of a new town as in the case of Jamsil, since the bounded perimeters of the individual estates prevented the planning of shared open spaces or circulation networks. Notable exceptions are the efforts to connect to wider urban green networks in the case of the Olympic Village Apartments and the Asian Athletics Village Apartments.

11.3 LOCATION OF COMMERCIAL FACILITIES

Shops catering to daily needs are a basic amenity of residential areas. In his explanation of the ideal neighborhood unit, Clarence Perry considered local shops as one of the basic requirements of a *'well-arranged residential community'* (Perry, 1929, p. 34). He considered that one or more shopping areas *'should be laid out in the circumference of the unit, preferably at traffic junctions and adjacent to similar districts or adjoining neighborhoods'* (Perry, 1929, p. 35). He went on to describe these facilities with further detail: *'The streets furnishing access to the stores are widened to provide for parking, and at the two more important points there are small market squares which afford additional parking space and more opportunity for unloading space in the rear of the stores. The total area devoted to business blocks and market plazas amounts to 7.7 acres'* (Perry, 1929, p. 37). As a summary, the author envisioned clusters of individual shops located in the periphery of the neighborhood unit, since they would generate traffic and so they could form larger shopping clusters at the junction of several units.

The case studies show a continuous process of experimentation about the location of the commercial facilities in relationship to the rest of the complex, challenging Perry's formula. Whether commercial facilities are located at the perimeter of the complex or within it depend on whether the *tanji* was built within a consolidated urban context or as a free-standing operation meant to spearhead the urbanization of new urban frontiers. This has produced four different strategies. In housing estates built in neighborhoods with consolidated amenities or framed within larger urban plans, commercial facilities were built in the periphery in order to attract customers from outside. In those cases, the shopping center acted as an interface between the housing estate and the city. The Hangang Mansion Apartments, the Yeoeuido Sibum Apartments, the renovation of the Mapo Apartments, the Tower Palace Apartments and the Jamsil Ricenz Apartments are clear examples of this. In *tanji* built *ex-nuovo* on virgin land or in peripheral locations, commercial facilities were typically located at the center of the plot next to other facilities in order to provide a civic anchor for the local community. Such would be the case of the Banpo Apartments, the Jamsil-2 tanji apartments, and the Hyundai Apkujeong Apartments. Other cases adopted a dual approach, with facilities both at the periphery and at the core of the parcel, as in the case of the Jamsil-5 tanji apartments. Finally, the fourth strategy adopted was a hybrid system where commercial facilities were located in a strategic position accessible from outside the complex but reinforcing at the same time the center of the *tanji* as a community space. Such is the case of the Olympic Village Apartments and the Asian Athletics Village Apartments.

The case of the original Mapo Apartments, the shops in the basement of the residential blocks contradict the logics above. The lack of domestic refrigerators at the time required a daily shopping routine, which was facilitated by placing shops as close as possible to the households. It is interesting to note that in the two cases featuring the renovation of an older apartment complex (Mapo Apartments and Jamsil-2 tanji Apartments), the original commercial facilities inside the parcel where shifted to the periphery, reflecting the degree of urbanization that had taken place in the surroundings.

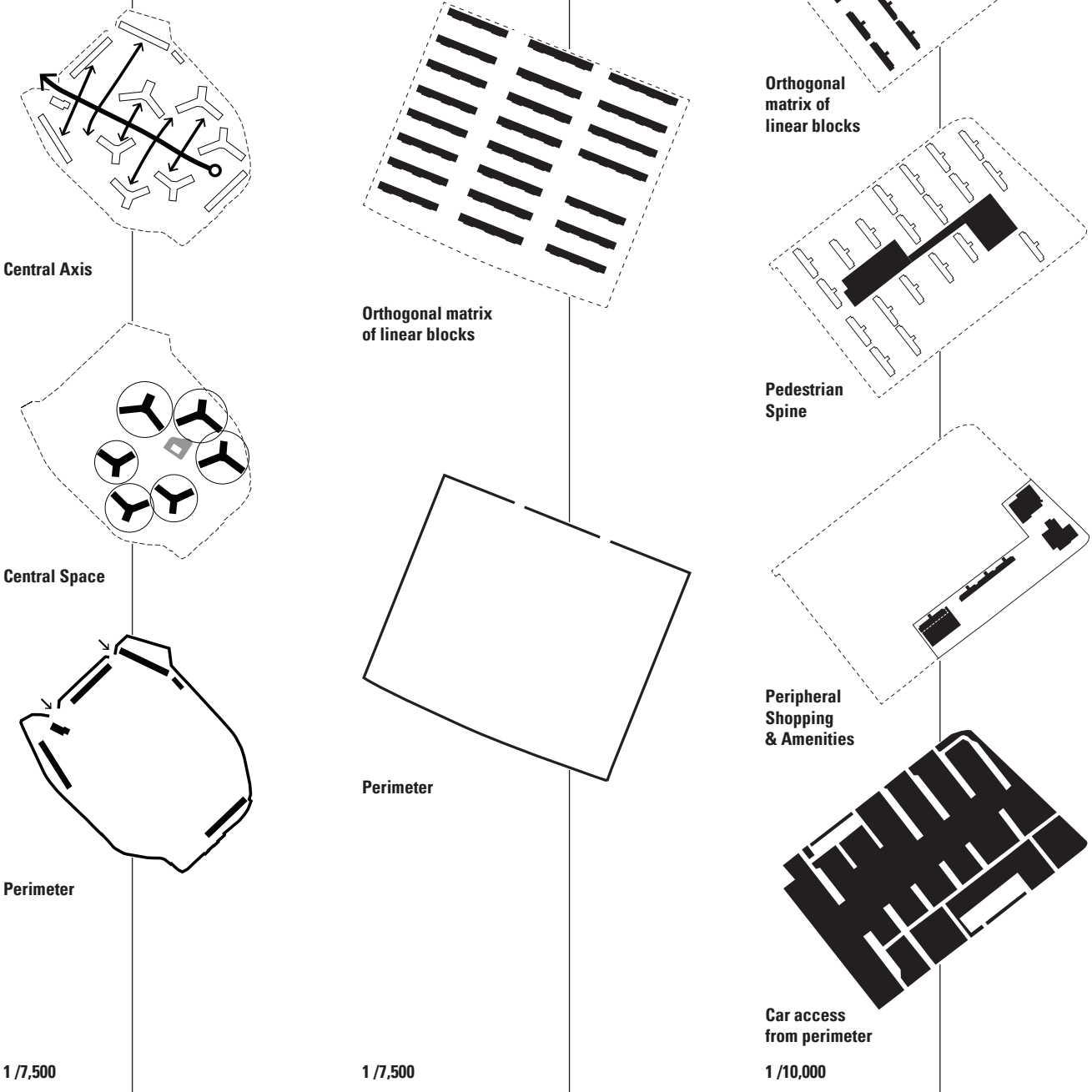
The building typology of commercial facilities is not addressed here since there is a chapter later in this section which deals specifically with it.

11.4 SEPARATION OF VEHICLES AND PEDESTRIANS

In the two first cases studied there was no thought on separating the flows of cars and pedestrians. They simply shared the same spaces, and that was it. The design of the Yeoeuido Sibum apartments showed a completely different approach by separating the two and providing a safe pedestrian environment at the core of the complex. Internal vehicular circulation was minimized by providing access to the parking lots of each residential block directly from the surrounding streets. In spite of the success of the strategy, it also had its downsides as it created a very permeable boundary and the crown of parking lots further isolated the complex from its surroundings. During the 1970s we find a great deal of experimentation on the topic of separation of flows. For instance, the design of the Jamsil-2 tanji took a different approach by creating small clusters with a pedestrian island at the center, surrounded by vehicular lanes with parking. In the mean time, the Banpo Apartments did not incorporate any strategy for the separation of flows, while the Apkujeong Apartments showed an inconsistent approach by providing just one pedestrian path which served only one portion of the complex. The Jamsil-5 tanji further elaborated on the strategy of separation of flows implemented in Yeoeuido, but the larger size of the parcel required the layout of an internal circulation loop which effectively isolated the central common spaces from the blocks in the periphery.

It would not be until the Asian Athletics Village Apartments and the Olympic Village Apartments in the mid-1980s when a design compromise about the separation of flows was reached: instead of pursuing a difficult complete separation of flows, different degrees of segregation were adopted in different situations, reflecting a more complex site articulation and understanding of mobility, which resulted in a fine-tuned definition of hierarchies of streets. A similar approach was pursued in the renovation of the Mapo Apartments, even though vehicular circulation became redundant and could have been avoided along the central spine in order to provide a safer pedestrian experience. In the cases of the Tower Palace and the Jamsil Ricenz, the increase in residential density and the vertical layering of functions allowed for sectional strategies of separation of flows.

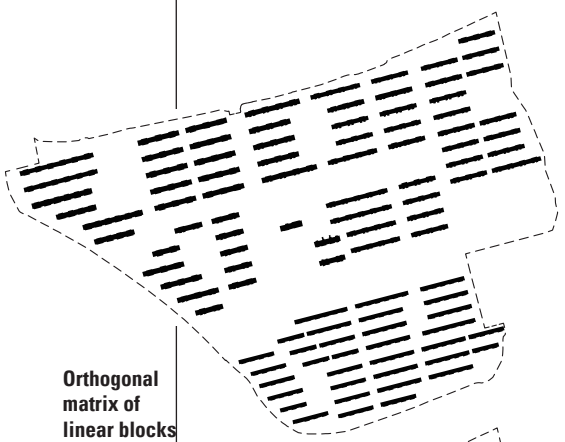
Figure 11-1. Synthesis of internal organizations from the Case Studies in Volume 02 (I).



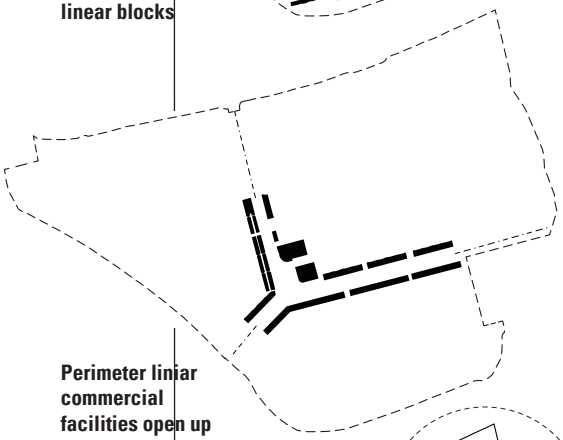
01/ 1962
MAPO
APARTMENTS

02/ 1970
HANGANG MANSION
APARTMENTS

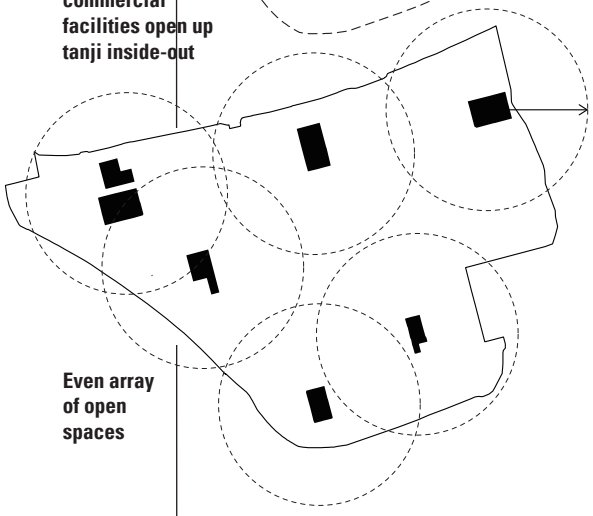
03/ 1970
YEOEUIDO SIBUM
APARTMENTS



Orthogonal matrix of linear blocks



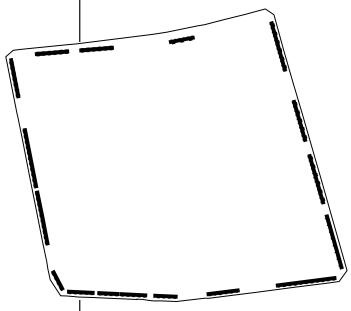
Perimeter liniar commercial facilities open up tanji inside-out



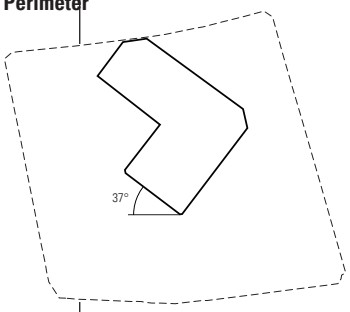
Even array of open spaces

1 /15,000

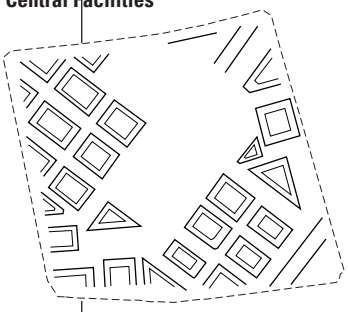
04/ 1972 BANPO APTS



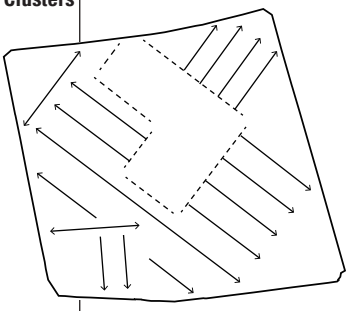
Perimeter



Central Facilities



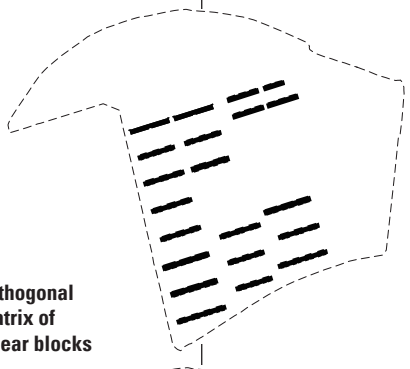
Clusters



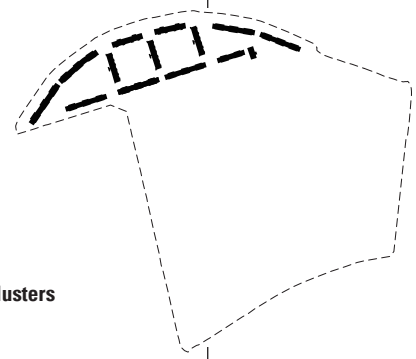
Geometrical layouts

1 /15,000

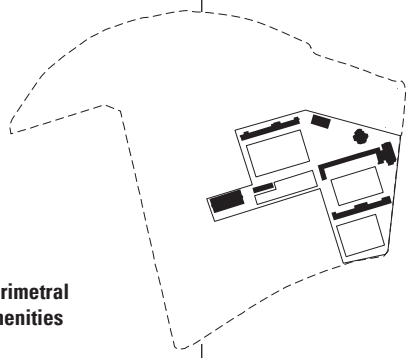
05/ 1975 JAMSIL 2-TANJI APTS



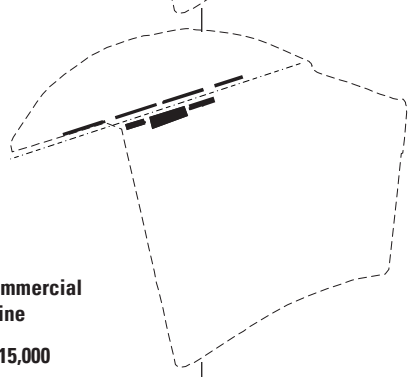
Orthogonal matrix of linear blocks



Clusters



Perimetral amenities

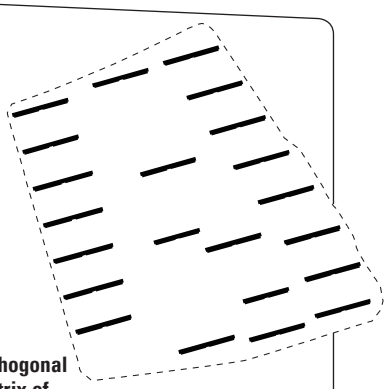


Commercial spine

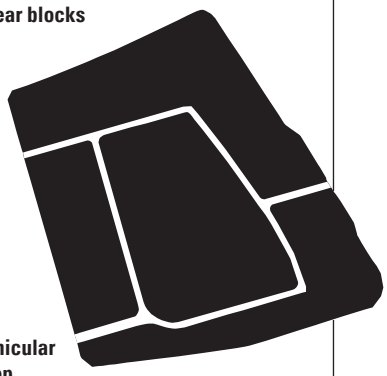
1 /15,000

06/ 1975 HYUNDAI APKUJEONG APTS

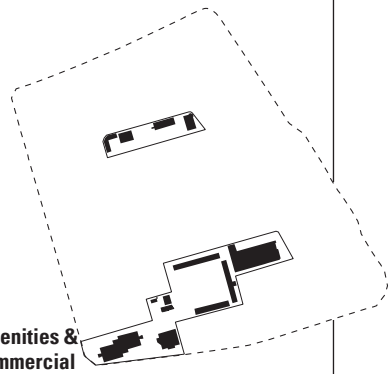
07/ 1983 JAMSIL 5-TANJI APTS



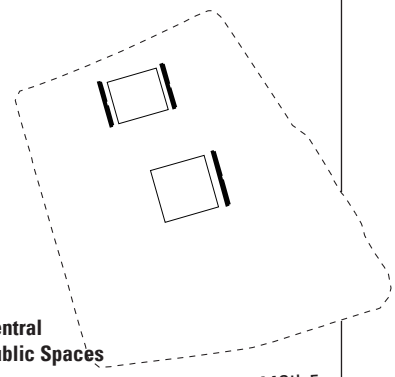
Orthogonal matrix of linear blocks



Vehicular Loop



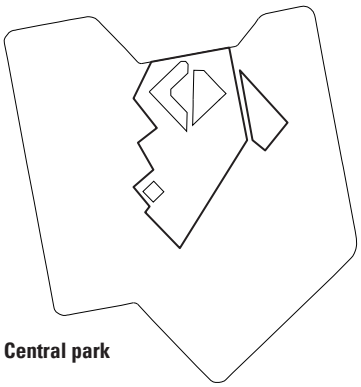
Amenities & Commercial



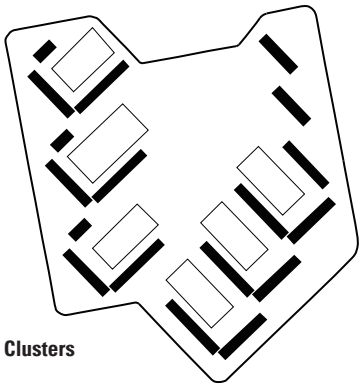
Central Public Spaces

1 /15,000

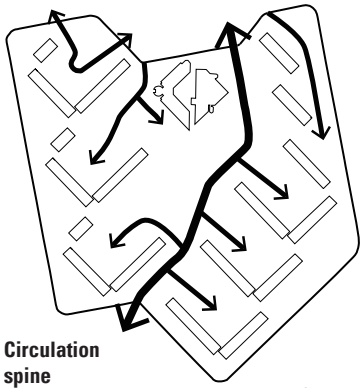
07/ 1983 JAMSIL 5



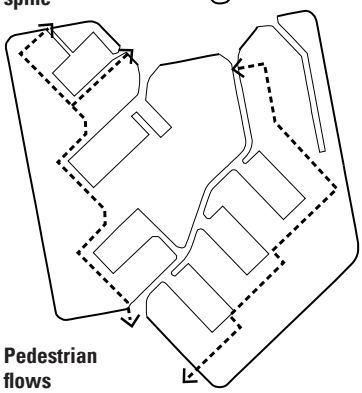
Central park



Clusters

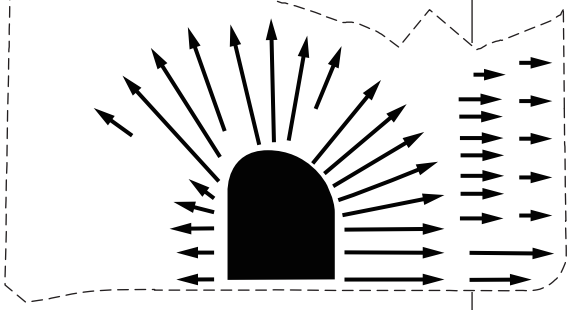


Circulation spine

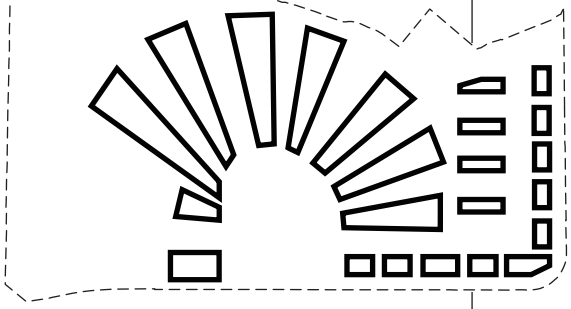


Pedestrian flows

1 /15,000



Radial structure



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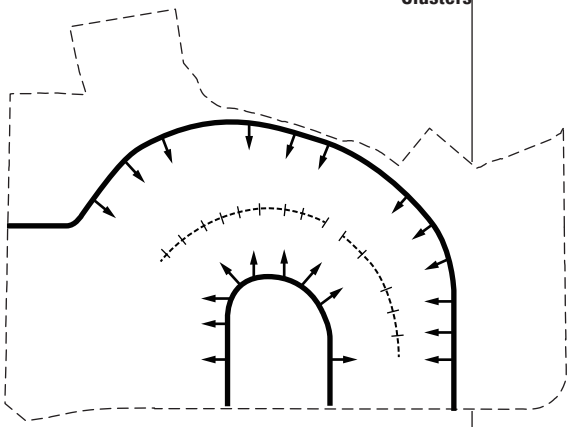
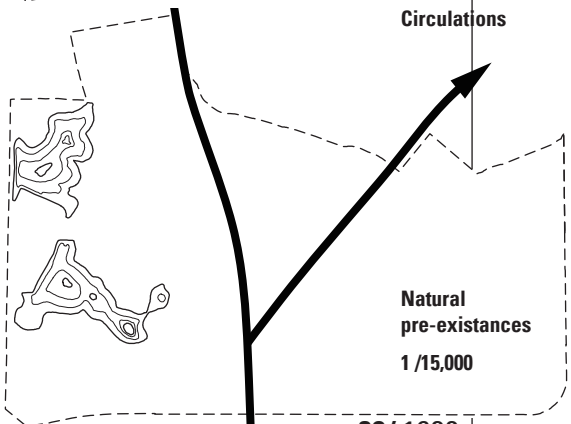


Circulations



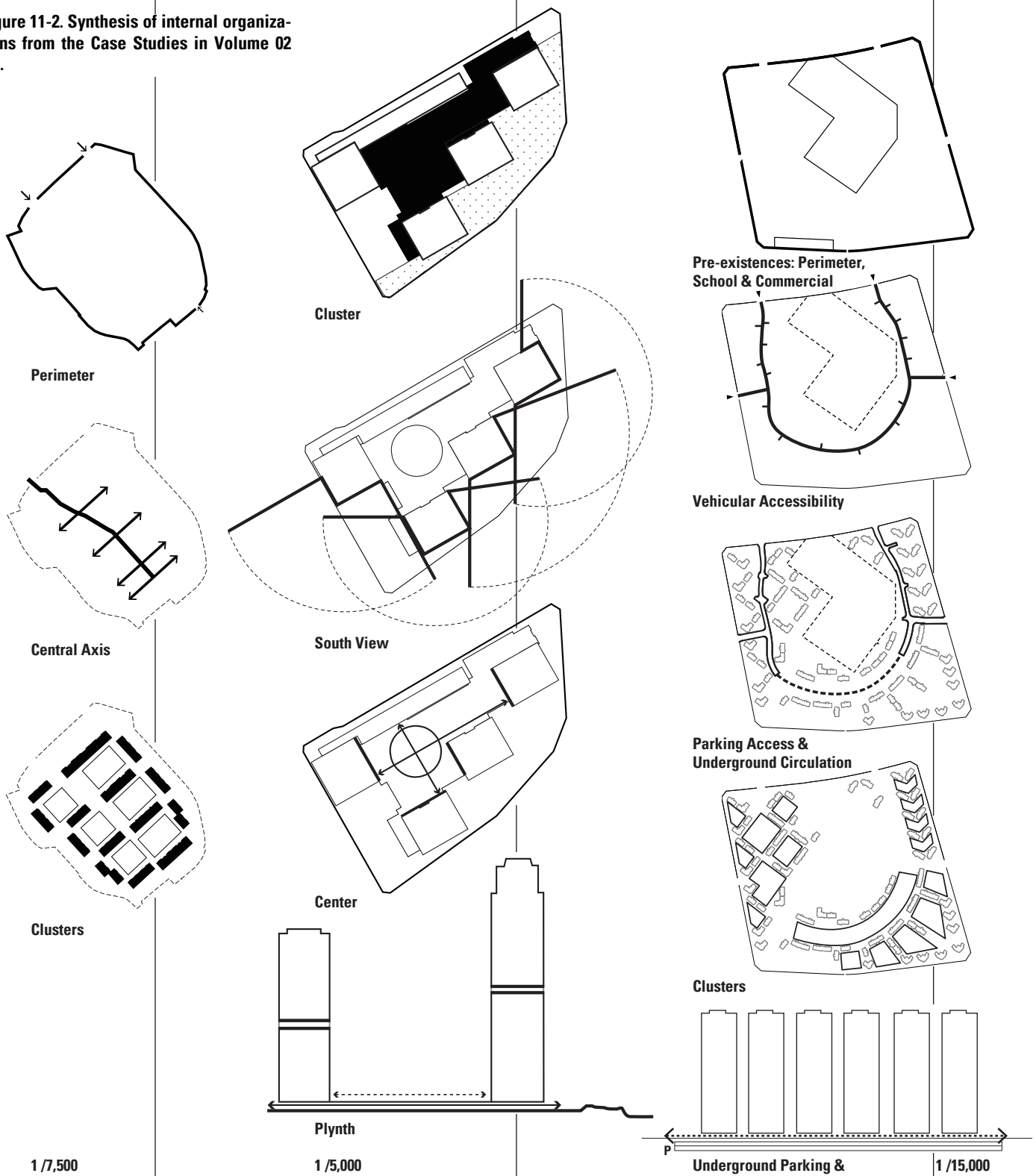
Natural pre-existances

1 /15,000

08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

09/ 1986
OLYMPIC
VILLAGE APTS

Figure 11-2. Synthesis of internal organizations from the Case Studies in Volume 02 (II).



10/ 1993
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SAMSUNG APTS

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PALACE APTS

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JAMSIL
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CHAPTER 12
APAT'U TANJI CASE STUDIES: CLUSTERS

Mass housing estates were initially introduced in earnest in Seoul during the 1960s, and became generalized during the 1970s. At the time, the related concepts of 'habitat', 'scales of association' and 'cluster' in relationship to the design of residential areas had already been widely discussed in the framework of the post-war CIAM[1]. Those discussions and the experiments developed by the members of the Team X influenced the development of the second generation British new towns during the second half of the 1950s, which in turn had a strong impact on the design of the paradigmatic Japanese new towns of Tama and Senri during the 1960s.

Even though the first *apat'u tanji* in Seoul were developed in parallel to those events, the concern for community building and the adoption of clusters within a hierarchy of scales of human association would only appear much later. The morphology of choice was the *zeilenbau* pattern established in Frankfurt during the 1920s. Through its focus on optimal conditions of lighting and ventilation; standardization; and optimization of construction methods, the model embodied the urbanism of the Charte d'Athènes the very idea of clusters and scales of human association was a reaction to. Nevertheless, even though the repetitive series of parallel housing blocks found in Hangang Mansion, Yeoeuido Sibum, Banpo, Apkujeong and Jamsil-5 were not intended to support the formation of communities, the spatial modules formed by each residential block, the green buffer in front of it, the longitudinal parking lots, and the shared access did constituted a semi-autonomous functional unit of sorts.

The first intent to create differentiated groupings within the larger complex came with the Jamsil-2 tanji, where four residential blocks surrounded a central common green space with a playground. This simple move supported social interactions among residents, while at the same time safeguarding them from vehicles. But the real breakthrough came with the adoption of distinct grouping strategies for the Asian Athletics Apartments and the Olympic Village Apartments during the mid-1980s, following an increasing interest in the scales of human association after the Promotion of Housing Construction Act of 1979 introduced three complementary planning scales to the neighborhood unit, called 'living zones' -생활권, *saenghwalgon*[2].

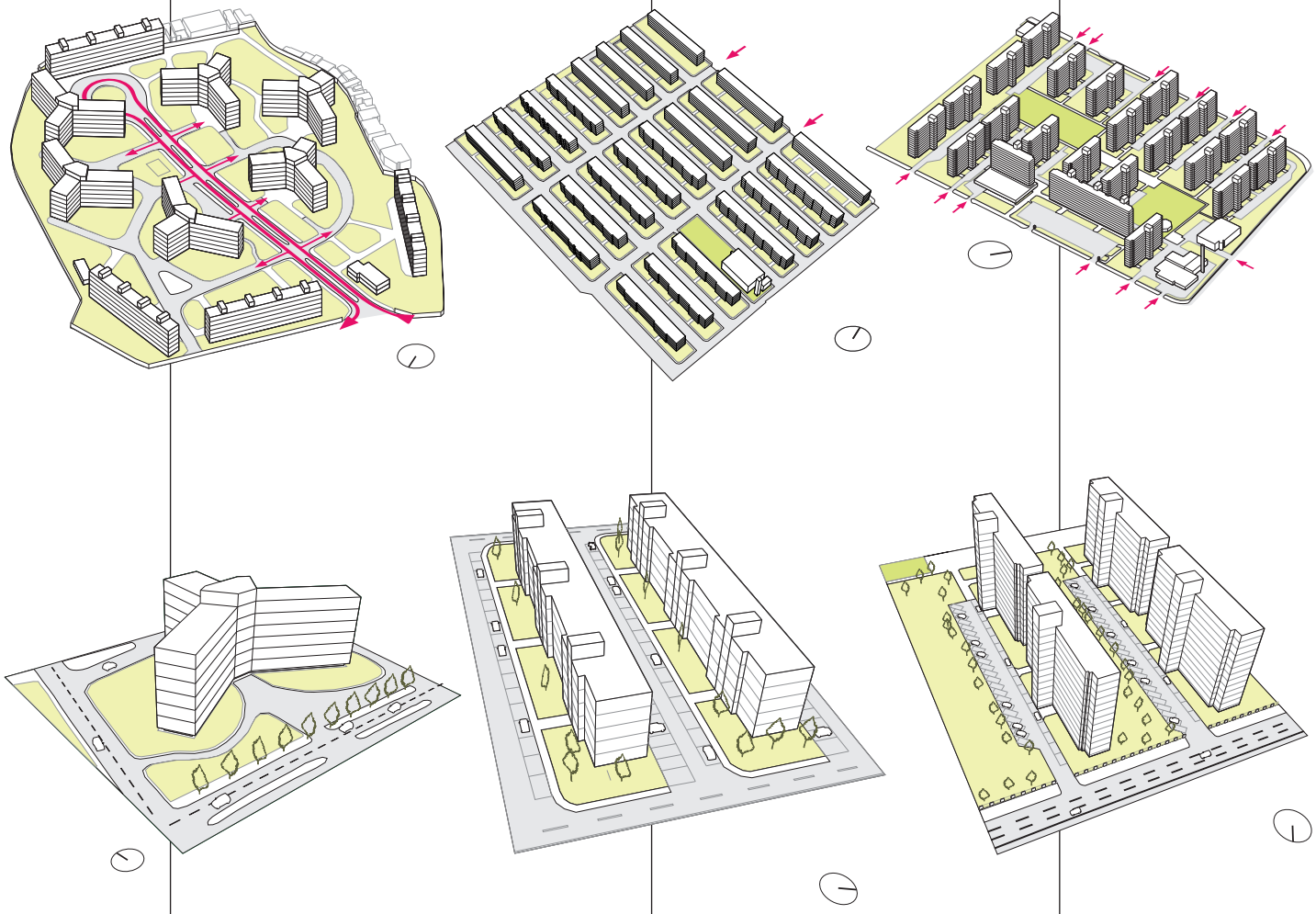
Clusters became the main formal strategy of the designs. Each one of them featured a distinct formal appearance; a void in the center included landscape features and pedestrian amenities as well as common parking facilities, shared access, parking, garbage disposal and surveillance; and a range of different sizes of apartments in order to cater to a social mix of residents. In the Asian Athletics Apartments, architect Joh Sung-young expressed the community-building intention of his design by providing opportunities for random encounters among residents as they walked from their front doors to the parking lots, even though that meant an inconvenience to the users –rather than taking the elevator directly to the parking basement (Joh, 2017).

1 See subchapter '21.2 Habitat as a Dialectic Complement to the Functional City' in Chapter 21, Volume 01.

2 See subchapter '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 01).

With the shift to private development since the end of the 1980s, clusters lost their social agenda but were maintained as a practical technical solution, as the planned provision of common facilities, open spaces and parking did contribute to a better residential environment. That is the case of the renovated Mapo Apartments and the Jamsil Ricenz Apartments.

Figure 12-1. Synthesis of clusters from the Case Studies in Volume 02 (I).



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APARTMENTS

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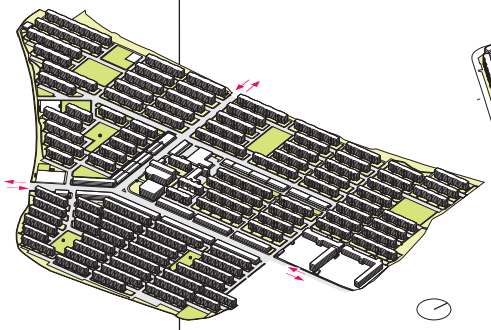

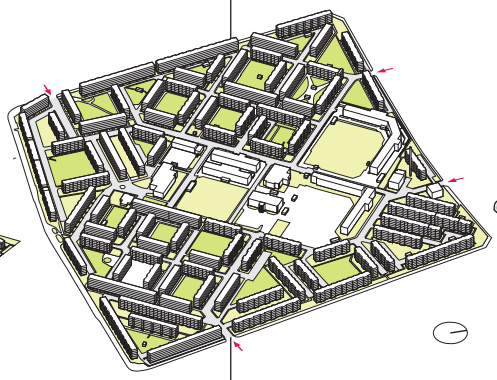

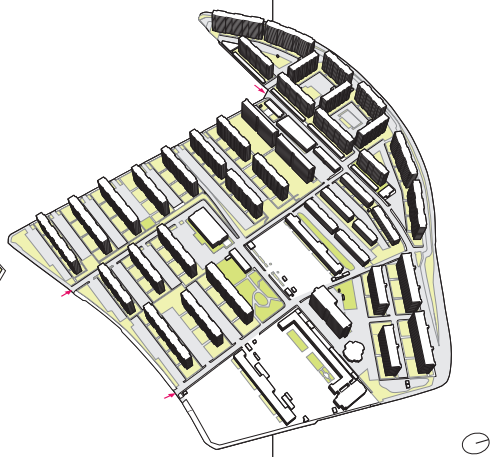

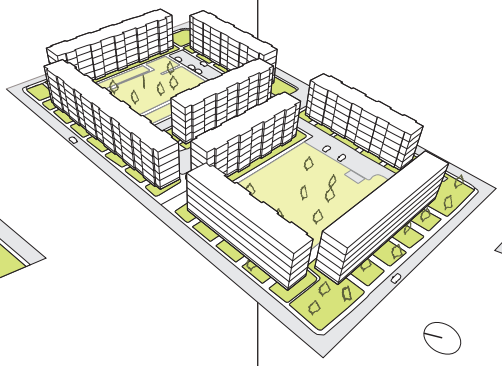

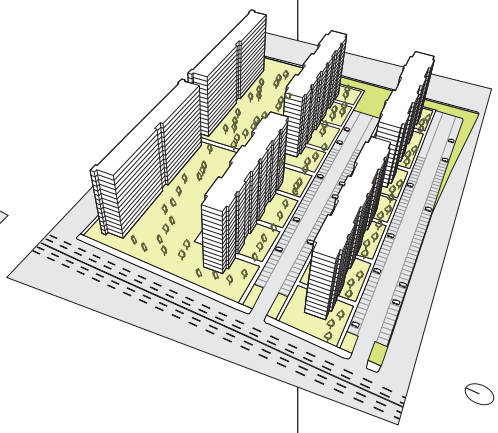

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APTS

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2-TANJI APTS

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APKUJEONG APTS

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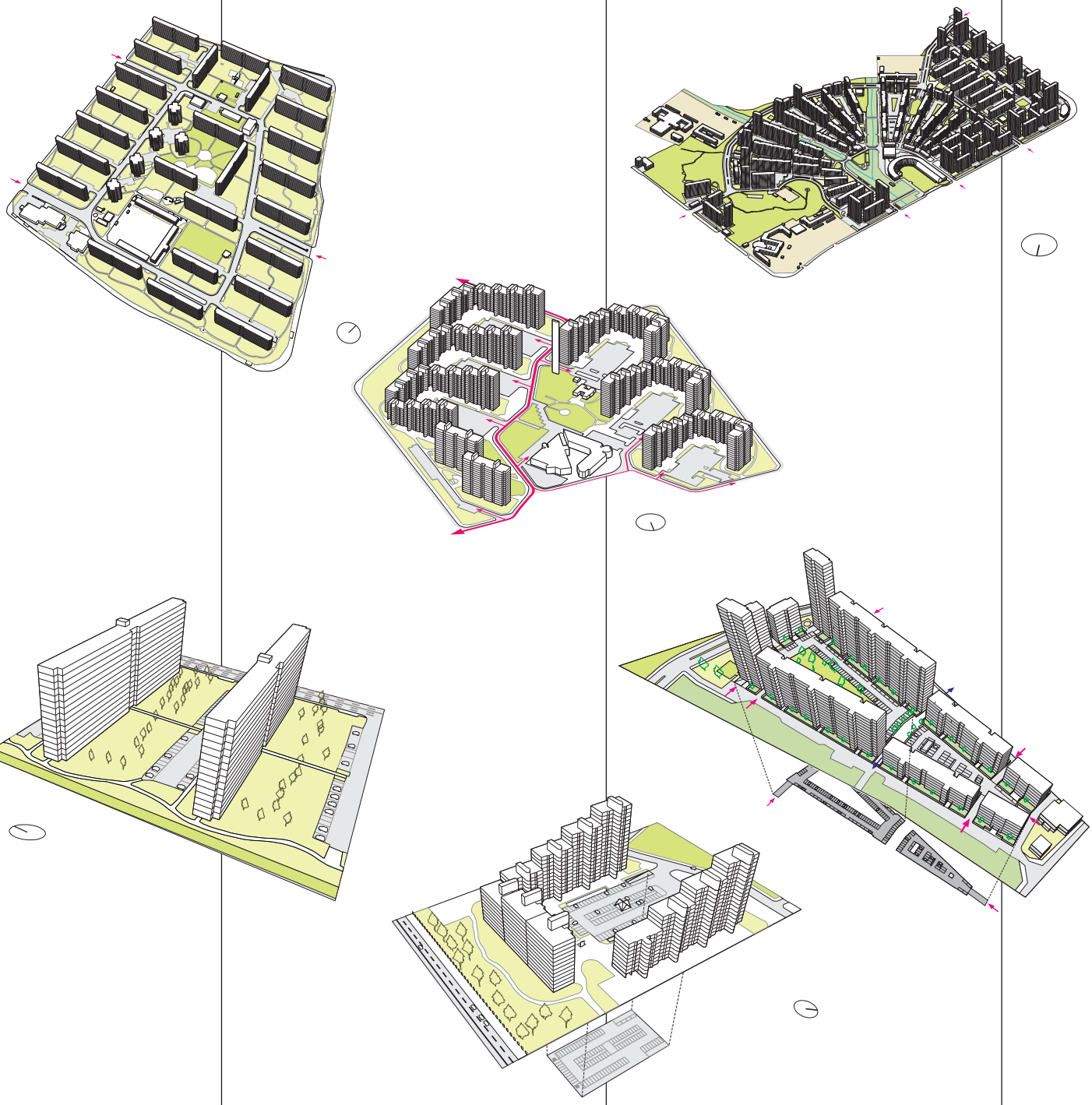
5-TANJI
APTS

1975 1980

Figure 12-2. Synthesis of clusters from the Case Studies in Volume 02 (II).



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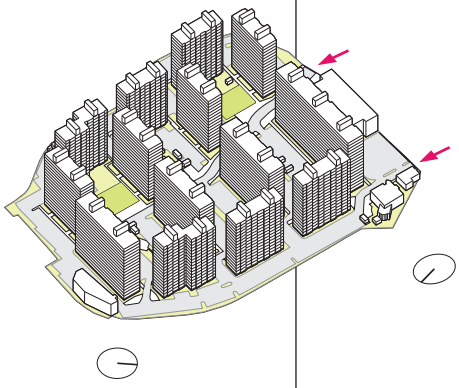

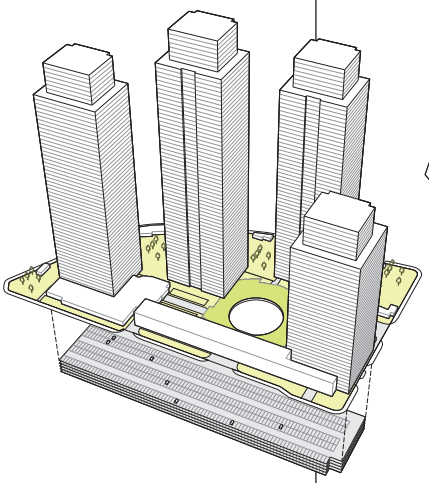

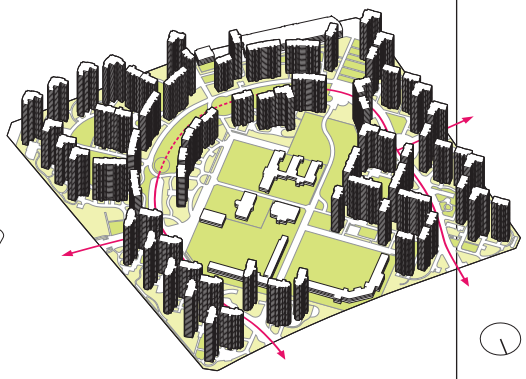

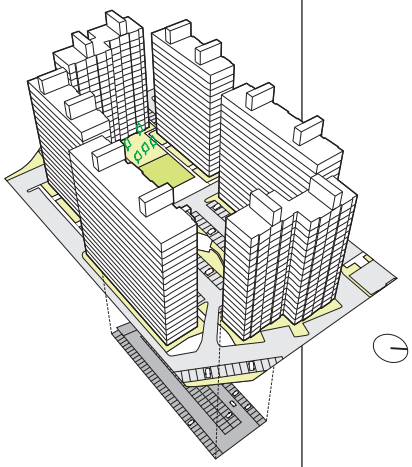

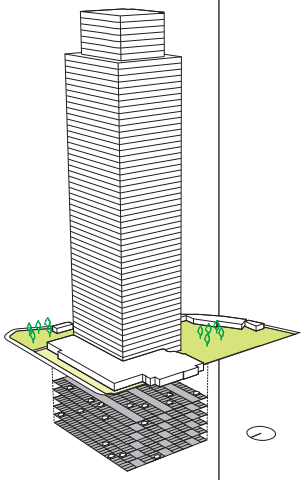

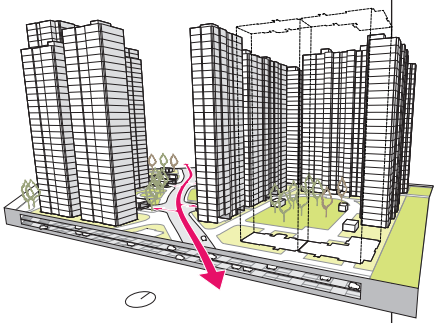

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PALACE APTS

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JAMSIL
RICENZ APTS

CHAPTER 13
APAT'U TANJI CASE STUDIES: USES OF OPEN SPACE

The use and definition of open spaces in the cases studied shows a great deal of evolution over the years. If one of the most esteemed innovations introduced by the Mapo Apartments of 1961 was the provision of large amounts of open space for its residents, over time this generic open space would gain in complexity and specialization in order to accommodate a variety of functions, in parallel to the overall increasing complexity of site planning. The most common types of open spaces have been:

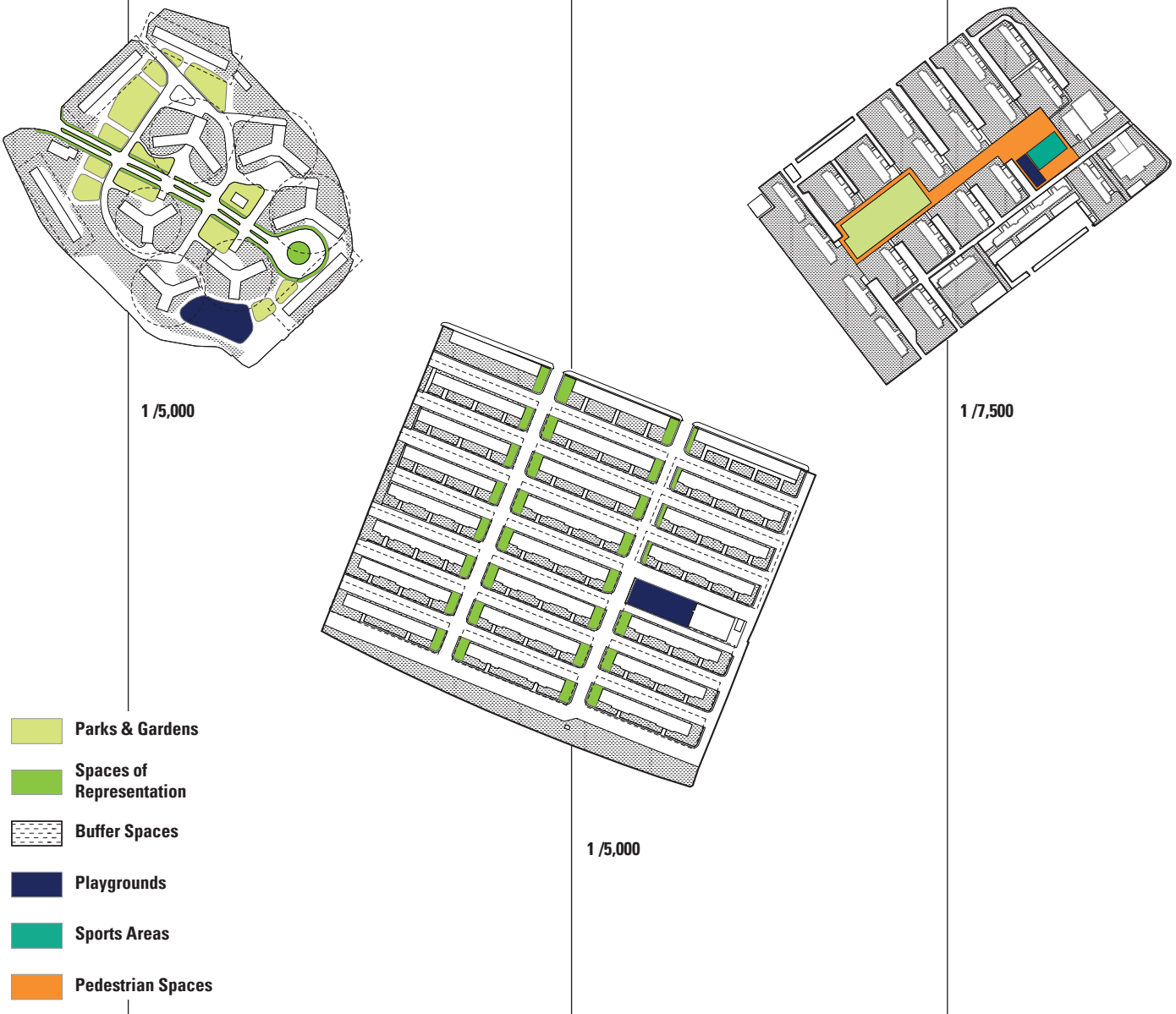
- **Parks and gardens:** Green areas dedicated to landscape and active recreational functions. While in the first *tanji* (such as in Mapo and Hangang Mansion) they hosted all kinds of recreational activities – concentrating the functions of gardens, playgrounds, plazas, etc.-, overtime those functions were segregated in specialized spaces. The gardens in Jamsil-2 tanji identified the residential clusters, becoming the most prominent feature of the complex. The allocation of parking spaces in the basement of the latest cases (Tower Palace and Jamsil Ricenz) freed the ground floor, offering unprecedented possibilities to develop a safe pedestrian realm with sophisticated landscape features.
- **Spaces of representation:** This category includes open spaces which do not have a high use value, but are nonetheless powerful formal organizational strategies and enjoy a high symbolic meaning. There are mainly two typologies: linear boulevards – such as the ones in the original Mapo Apartments, Hangang Mansion Apartments and the renovated Mapo Apartments by Samsung; and main plazas which represent the center of the complex – such as the ones in Jamsil-2 tanji Apartments, Apkujeong Apartments, Jamsil-5, Asian Athletics Apartments, Olympic Village Apartments and the central roundabout at the Tower Palace Apartments.

- **Buffer spaces:** Sleeves of green spaces planned either around residential buildings or around the whole complex with the purpose to provide privacy. They were not supposed to be trespassed, so they remained as unused pockets of vegetation, a green no-man's land of sorts. Since their total accumulated area can be quite important – especially in the densest iterations of the *zeilenbau* model: up to a 46% of the total area in Jamsil-5 tanji and a 48% in Yeoeuido-, the abuse of this spatial strategy produced spaces of low quality and reduced spaces for socialization and active leisure. One positive aspect is that in the oldest complexes, the trees planted in these buffer zones have matured into full-grown trees that provide a strong identity. In contrast, the careful use of the building section to provide privacy in the Olympic Village Apartments has allowed keeping the need for these buffer zones to a minimum.
- **Playgrounds:** The early adoption of playgrounds is testimony to the importance of *apat'u tanji* as vessels of middle class families. Nevertheless, in spite of the evolution of site planning strategies and landscape features over the years, playgrounds evolved very little. They remained as clearly confined areas based mainly on generic recreational equipment and a soft paving; with little integration with other types of open spaces or natural elements.
- **Sports Areas:** Sports were an important part of the mass housing lifestyle promoted by the administration through the Korea Housing Corporation. In the early days, swimming had been endowed as the sport for the middle class, but the difficult maintenance of the facilities and the harsh winters gradually shifted that preference towards tennis and basketball. Dedicated courts started to appear since the Banpo apartments, even though they were poorly articulated with the rest of the open spaces. The Jamsil-5 tanji hosts a tennis club with up to six courts. The residents of *tanji* with a school within are also allowed to use the yards during weekends, usually for jogging or to play soccer.

With the transition from the *zeilenbau* site planning system to more complex layouts based on clusters, the quality and variety of open spaces increased. Each one of the clusters in the Asian Athletics Apartments was identified by its own communal space, designed to favor random meetings among residents. The Olympic Village Apartments included original natural features of the site such as two existing streams and pine tree forests on the hills in the northern side of the parcel. Furthermore, the units on the first floor of the residential buildings were compensated for their limited privacy with private front and back yards.

Besides the aforementioned increase in the quantity and quality of open spaces, a critical issue stands out throughout the case studies: the need for their integration and articulation with the rest of the site planning strategies –circulation, access, building arrangement, etc.- into a coherent site planning.

Figure 13-1. Synthesis of uses of open space from the Case Studies in Volume 02 (I).



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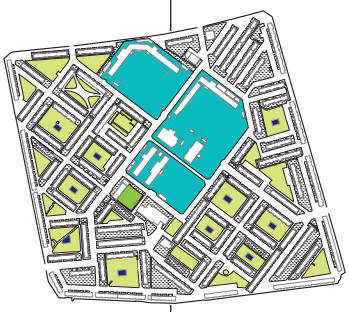

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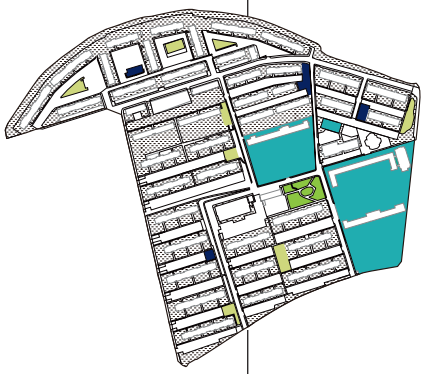

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07/ 1983 JAMSIL 5-TANJI APTS

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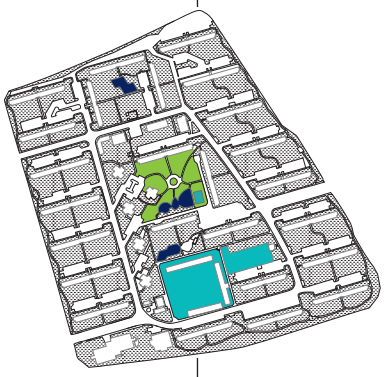
Figure 13-2. Synthesis of uses of open space from the Case Studies in Volume 02 (II).



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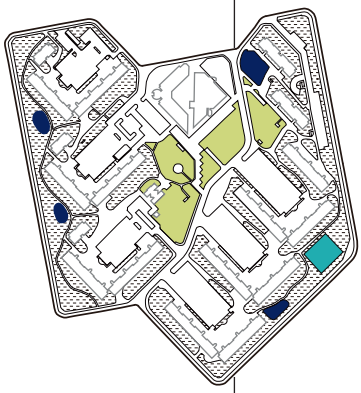

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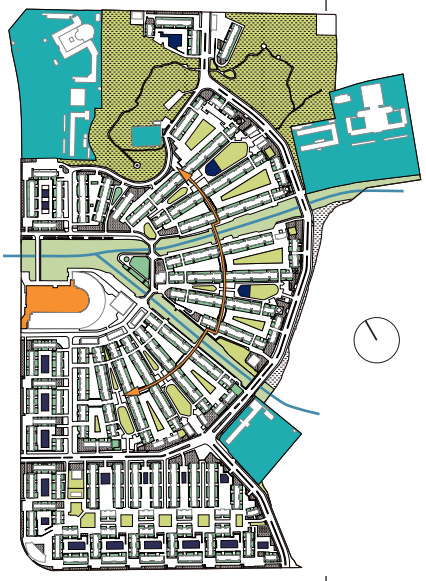

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- Parks & Gardens
- Spaces of Representation
- Buffer Spaces
- Playgrounds
- Sports Areas
- Pedestrian Spaces

07/ 1983 JAMSIL 5

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VILLAGE APTS

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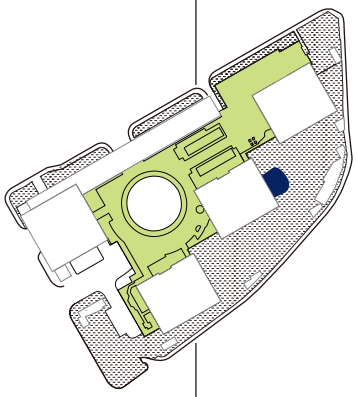

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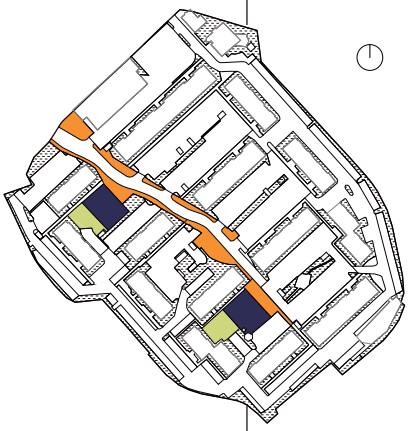

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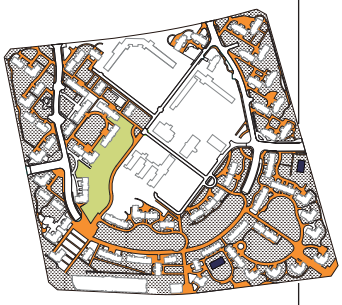

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PALACE APTS

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CHAPTER 14
APAT'U TANJI CASE STUDIES: DEFINITION OF OPEN SPACE

From rows of parallel residential blocks to clusters

The treatment of open space in the case studies shows a clear evolution, reflecting the development of site planning over time. Mass housing was adopted as a solution to the housing crisis, thus the main focus was the provision of residential units from a quantitative point of view. The introduction of this new urban morphology allowed for large portions of the parcels to remain empty, but initially this newly found open space was simply the distance left in between buildings, a negative space as seen in the original Mapo Apartments.

Over time, the evolution from *zeilenbau* layouts to site planning strategies based on clusters brought the identification of residential built mass with its associated common space, so buildings and void became indivisible. The staging of relationships between voids opened up a whole new dimension to site planning.

In tanji with *zeilenbau* layouts such as in Hangang Mansion, Banpo and Apkujeong, open spaces were simply 'carved out' from the repetitive built mass. Thus, they were subservient to the dimensional and positional logics of the buildings rather than having logics of their own. In spite of the richness of the open spaces in the German references for *zeilenbau* arrangements, based on hygienist concerns, the voids in the early *tanji* in Seoul remained as an afterthought and were not planned in a cohesive manner with the rest of the estate.

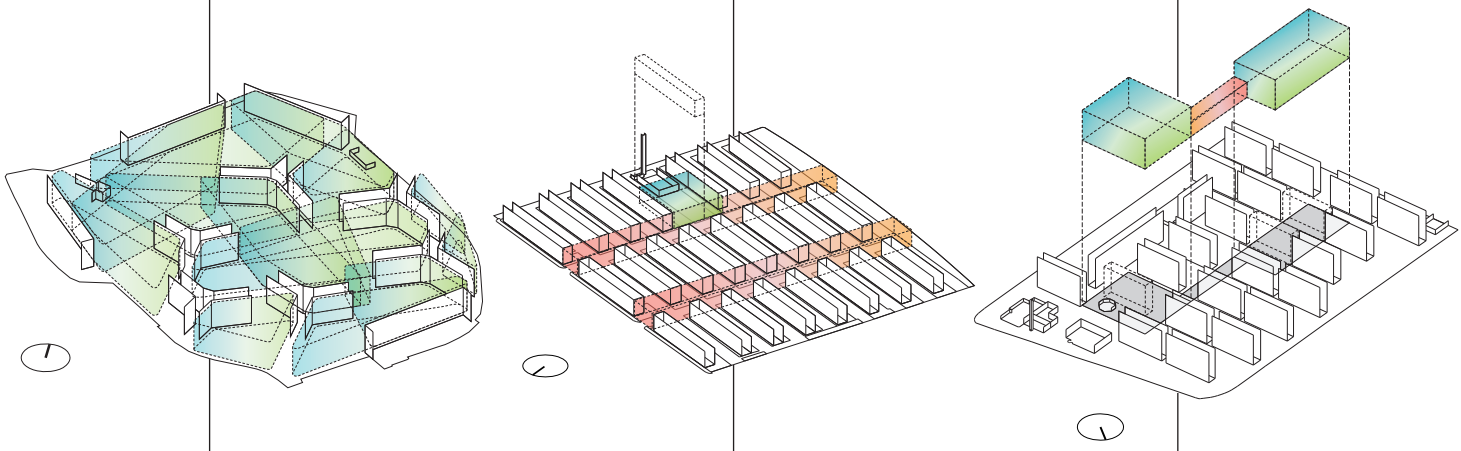
In Yeoeuido for the first time, the main open spaces were not treated simply as a leftover. They were embraced as the central feature articulating the whole complex and became a precedent in the use of diverse landscape techniques and in the formulation of a separated pedestrian network. Experiments with open space carried on with the residential clusters of the Jamsil-2 tanji. By folding the linear blocks into a square, the void in the middle became inextricable from the built mass and a new scale in the design of mass housing appeared. Nevertheless, the lack of articulation of the different clusters among themselves or with a larger open space network, and the monotonous repetition of similar-looking clusters without a clear hierarchy required further development.

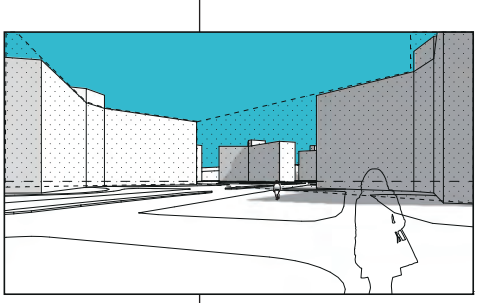
The large amount of underutilized buffer spaces in between the blocks of Jamsil-5 tanji was a symptom the *zeilenbau* layout reached its limit in the pursuit of residential density. This signaled the definitive transition to site planning strategies based on clusters, exemplified by the Asian Athletics Apartments and the Olympic Apartments. The common voids in their clusters became the cornerstone of a wide variety of open spaces and experiences, linking different scales one to another and thus articulating a sophisticated and carefully planned sequence that integrated both the buildings and the landscape. In the Olympic Village, the wedge shape of the clusters helped mediate between the private gardens of the first floor units and the monumental scale of the central plaza. This sequence of open spaces encompassed the green corridors along the existing streams, reaching all the way to the Han River to the north and the Seoul greenbelt to the south.

The lessons learned in the design of those two cases were not explored further, for the transition to the private development of mass housing and the need to increase residential density quelled any further experimentation. Construction companies adopted clustering as a basic site planning strategy and open spaces simply followed that logic. The increasing height of the residential towers brought a whole new vertical scale to the pedestrian experience, without any attempt to transition to the human scale as there had been in both the Asian Athletics and the Olympic Apartments through the stepping of the residential blocks. There was no concern for nested hierarchies of open space, neither for possible linkages with larger open space systems in the renovated Mapo Apartments, in the Tower Palace or in Jamsil Ricenz. The high-rise condominium typology adopted in the Tower Palace and the complexity of its plinth allowed nevertheless for an interesting layered landscape at its base, while the sheer height of the towers appropriated the views to the south as a unique asset.

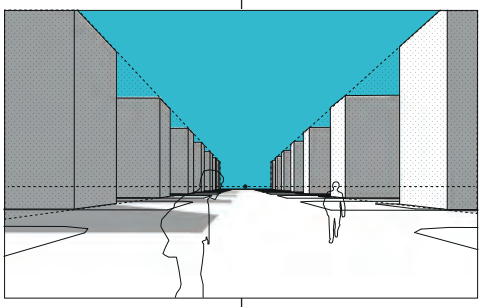
With the location of all parking facilities underground, the whole ground plane in the Jamsil Ricenz Apartments became a dedicated, car-free pedestrian realm, fully dedicated to landscape and recreational areas. A whole new genre of residential landscape architecture emerged, merging traditional themes with modern technology – it was all perched on a gigantic green roof above the parking structure after all. In spite of the scale and sophistication of the landscape features, the definition of different scales of open space, their programming, and their articulation with the overall layout and circulations could have learnt more from the precedent set by the Asian Athletics and the Olympic Apartments.

Figure 14-1. Synthesis of definition of open space from the Case Studies in Volume 02 (I).

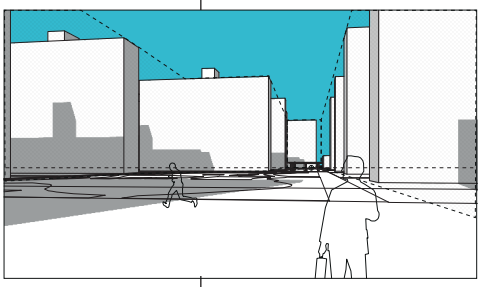




Virtual Outdoor Rooms



Boulevards and Playground as missing building parcel



Open space as articulating central spine

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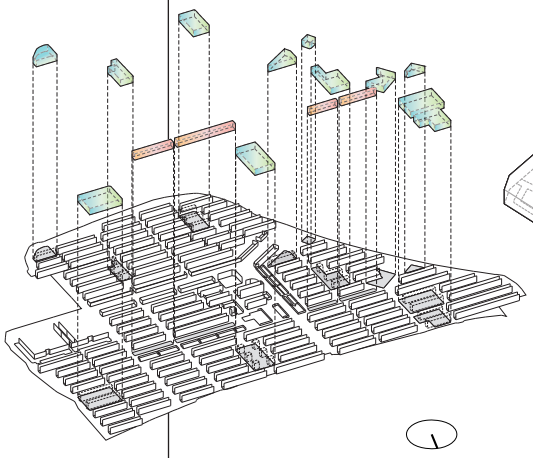
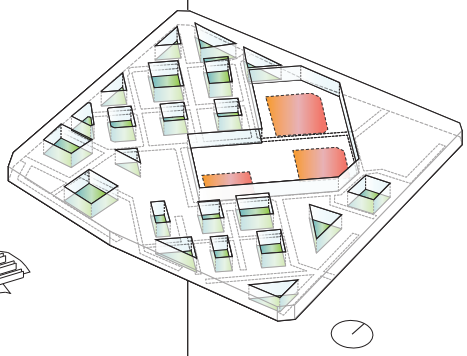
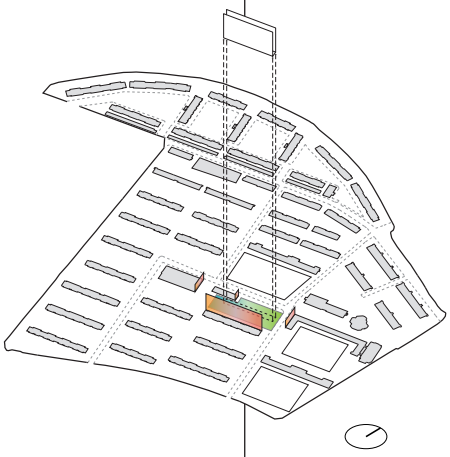
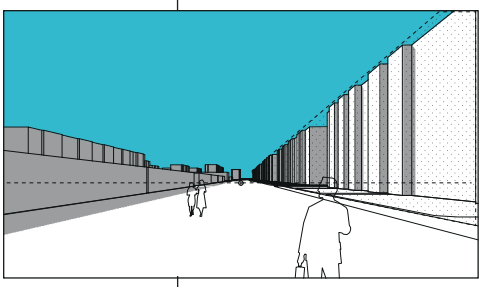
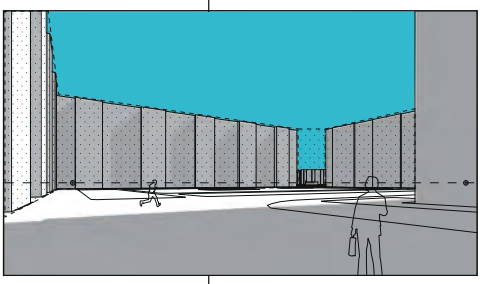




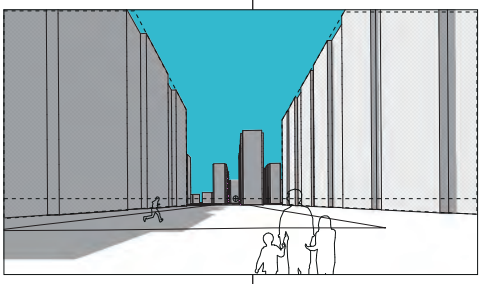




View E/W along 1-storey linear retail spaces



Typical garden at the core of a housing cluster



Buffer space in between residential blocks

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APTS

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2-TANJI APTS

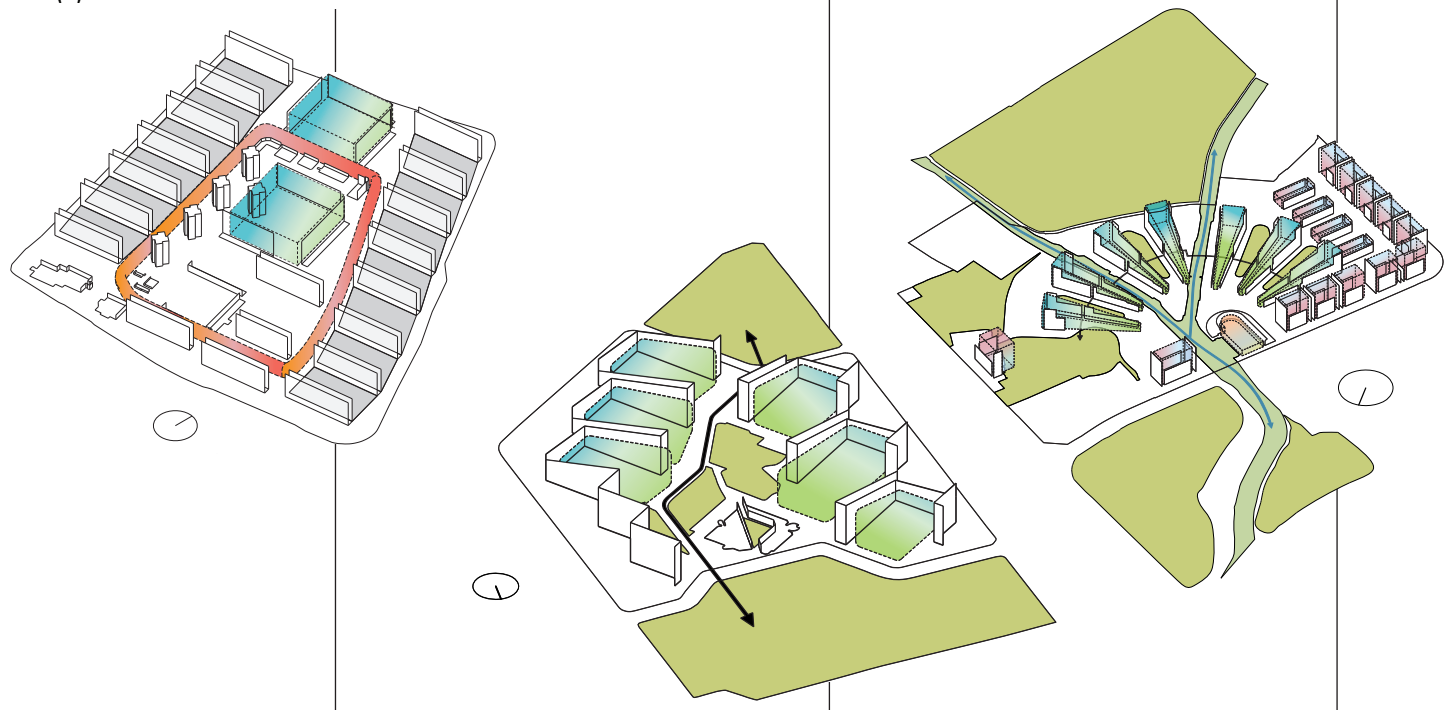
06/ 1975
HYUNDAI
APKUJEONG APTS

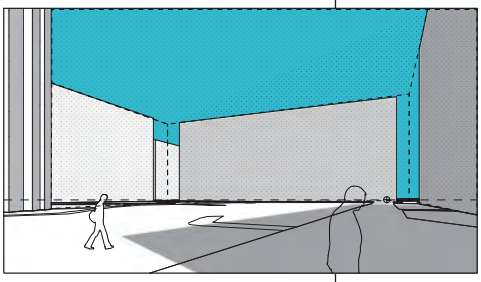
07/ 1983
JAMSIL
5-TANJI
APTS

1975

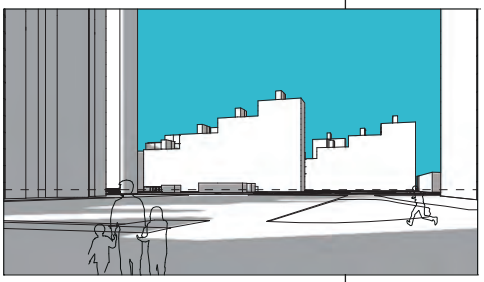
1980

Figure 14-2. Synthesis of definition of open space from the Case Studies in Volume 02 (II).

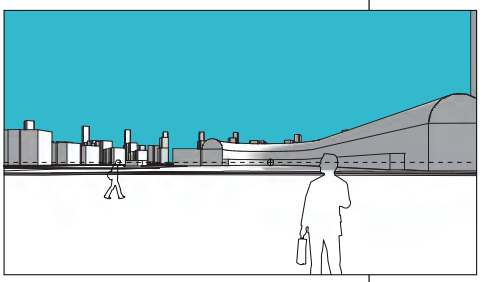




Central public space



Central Garden

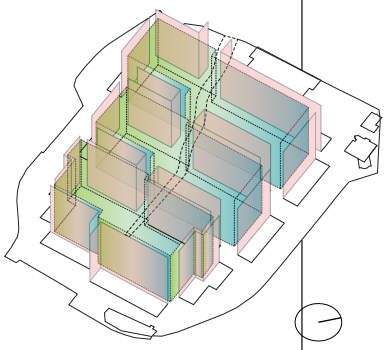


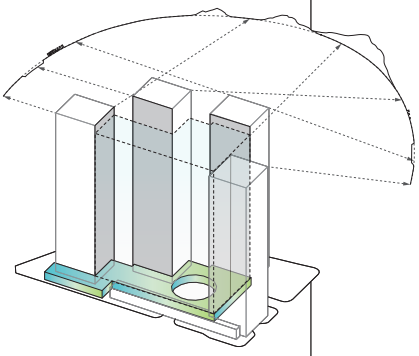
Main Plaza, with Arcade in the background

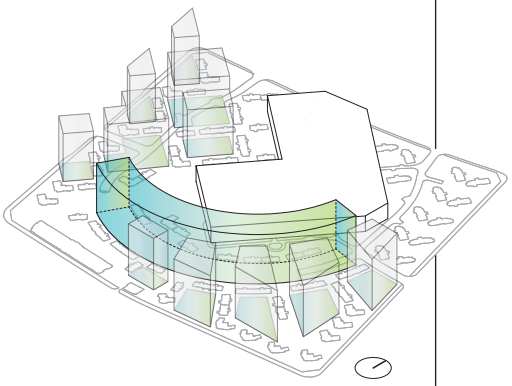
07/ 1983 JAMSIL 5

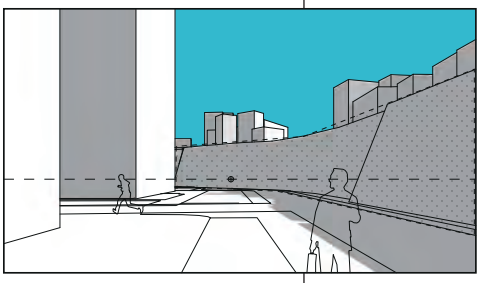
08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

09/ 1986
OLYMPIC
VILLAGE APTS

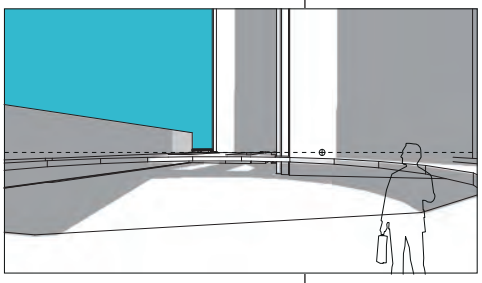




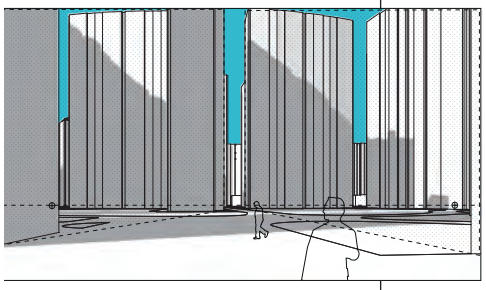




Buffer along the retaining walls enclosing the apartment complex to the southwest



Pedestrian deck on the third floor of the commercial plinth, looking over porte-cochère



View along the main vehicular loop

10/ 1993
MAPO
SAMSUNG APTS

11/ 1999
SAMSUNG TOWER
PALACE APTS

12/ 2008
JAMSIL
RICENZ APTS

CHAPTER 15
APAT'U TANJI CASE STUDIES: CIRCULATION NETWORKS

15.1 ACCESS

Access strategies differ according to both the urban context of the *tanji* and their internal layout, especially in terms of the structure of circulations. Thus, in complexes built in consolidated urban settings, accesses will be mandated by the existing street network, as in the original Mapo Apartments and in the Tower Palace. In *tanji* built in new areas of development such as Hangang Mansion, Yeoeuido Sibum, Banpo, Apkujeong and Olympic Apartments, access will be highly dictated by the new road networks laid out as part of those developments. Housing estates built within new towns based on mass housing, such as the ones in Jamsil, will adopt common strategies in terms of the location and number of access points. Finally, *tanji* used as urban renewal strategies of older complexes will be highly constrained by the access points of the previous estates, as the street networks around would have consolidated around them. Such is the case of the renovation of the Mapo Apartments and of the Jamsil-2 Apartments into the Jamsil Ricenz.

15.2 INTERNAL CIRCULATION: VEHICLES & PEDESTRIANS

The evolution of internal circulations reflects the development of site planning strategies in order to accommodate the increasing pressure of private automobile ownership and its demands for parking space and for a sound relationship with pedestrians. In fact, the emergence of the automobile and its consequence in communities had been precisely one of the main reasons behind Perry's formulation of the neighborhood unit during the 1920s, one of the main precedents for the design of *apat'u tanji* in Seoul[1].

The first cases show little segregation between cars and pedestrians. They shared the same streets and pedestrians were protected by a raised sidewalk. The basic traffic layout would be a hierarchical tree structure with cul-de-sacs, as in the original Mapo Apartments. In some cases, the presence of too many trunks in the tree-like structure would derive into a redundant grid structure, as in the cases of Hangang Mansion Apartments or in Banpo.

The Yeoeuido Sibum apartments took a radical stance in the separation of flows, preventing inner traffic by locating parking lots adjacent to the perimeter of the *tanji* and thus allowing for a pedestrian friendly central core. The design adopted the well-known cul-de-sac strategy deployed in Radburn by Clarence Stein and Henry Wright in the late 1920s, albeit adapted to a much higher density in a limited site within an urban setting. Through different layouts, the Jamsil-2 tanji Apartments and the Apkujeong Apartments attempted to limit the redundancy of street grids by creating loops around groupings of residential buildings. Nevertheless, clustering strategies were not fully developed and the vehicular loops cut off pedestrian flows through the sites. That would be improved in later complexes such as the Jamsil-5 tanji (with a vehicular loop) and the Asian Athletics Apartments (with a central spine). With very different approaches, both cases limited the contact between vehicles and pedestrians, even though a complete separation was not fully

1 See '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 01.

achieved. The pedestrian strategy in the later was particularly cohesive with the definition of residential clusters, to the point of defining passages through the buildings. The Olympic Village Apartments demonstrated a pragmatic compromise by crafting different types of relationships between vehicles and pedestrians, depending on speed and type of road. A system of parallel rings and secondary radial arteries was destined to vehicles; while pedestrians would thread through a perpendicular network. Both systems overlapped at certain points, such as in the parks along the radial streets or in the alleys leading to the parking facilities in the clusters.

The renovation of the Mapo Apartments featured a double circulation system with a central spine and a perimetral loop which is redundant due to the limited area of the *tanji*. It would have made much more sense to get rid of vehicles in the central spine, so it could be exclusive to pedestrians. The residential density of the last two cases –Tower Palace and Jamsil Ricenz- allowed for an efficient segregation of flows in section. It is not clear why that strategy was not implemented fully over the whole site in Jamsil, where the main vehicular spine remained at street level for two-thirds of its length, segregating pedestrian flows in what could otherwise be rendered as a fully pedestrian plane.

15.3 PARKING STRATEGIES

The development of parking strategies to cope with the increasing rate of private automobile ownership during the period have been one of the most important drivers of the evolution of site planning in mass housing. When the Mapo Apartments were built in 1962, the rate of private car ownership was so low that no provision of parking was contemplated. In the following decades car ownership increased exponentially, but the redundant street network could easily accommodate the demand for parking space.

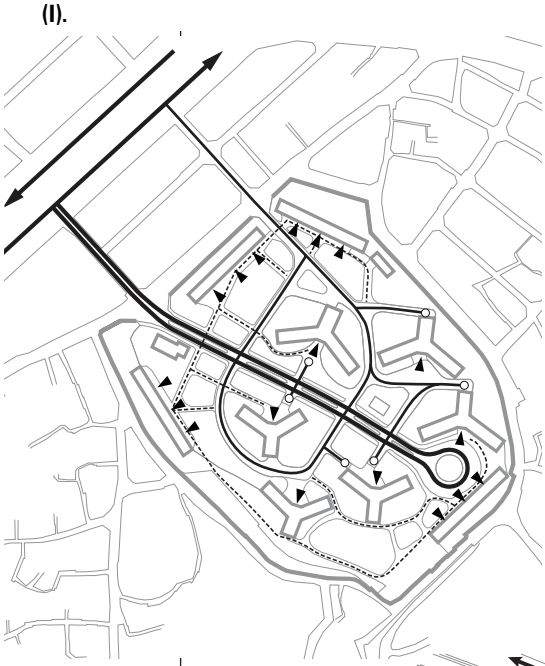
The automobile became an important element in the design of *apat'u tanji* located on reclaimed land related to the Han River Project, far from consolidated urban areas and targeted to affluent families. The combination of cars and mass housing within an emerging consumer society backed by the import substitution policies of the developmental government soon characterized the middle-upper classes and became a symbol of status. The redundant street grids of the Hangang Mansion Apartments and the Banpo Apartments offered ample provision of parking which has not been exceeded even today, forty-five years later.

The same cannot be said of the Yeouido Sibum apartments, where over time parking capacity has reached its full capacity. Even though parking was part and parcel of the site planning strategy, since no possibility of expansion was included, residents have had to improvise informal strategies to save space by parking in double and triple rows or by invading other areas. A similar situation took place in Jamsil-2 tanji, Apkujeong and Jamsil-5 tanji, but the presence of internal distributor streets helped cope with the increasing demand.

Parking strategies in the Asian Athletics Apartments and in the Olympic Village Apartments took a different approach, with two main innovations: parking lots were integral to the clustering system; and for the first time an underground parking level was introduced. This allowed freeing up open space at the center of the clusters for the community. Furthermore, the basement parking level in the Olympic Apartments was raised to provide privacy and private front and back yards to the first floors units. Non-residents could use street parking and dedicated parking areas in the commercial arcade. The renovation of the Mapo Apartments followed similar approaches.

The high residential density of the Tower Palace brought another radical innovation with the provision of all parking facilities underground, in order to free up the limited footprint for more valuable uses such as the commercial center, green areas and amenities for residents. This set up a strong precedent for all *tanji* developed afterwards. The superblocks of the mass housing estates would be treated as an expansive single building mass anchored to the ground with two or three levels of underground parking facilities, with a green roof on top from where the individual residential towers appear to emerge. The Jamsil Ricenz is an example of that.

Figure 15-1. Synthesis of circulation networks from the Case Studies in Volume 02 (I).



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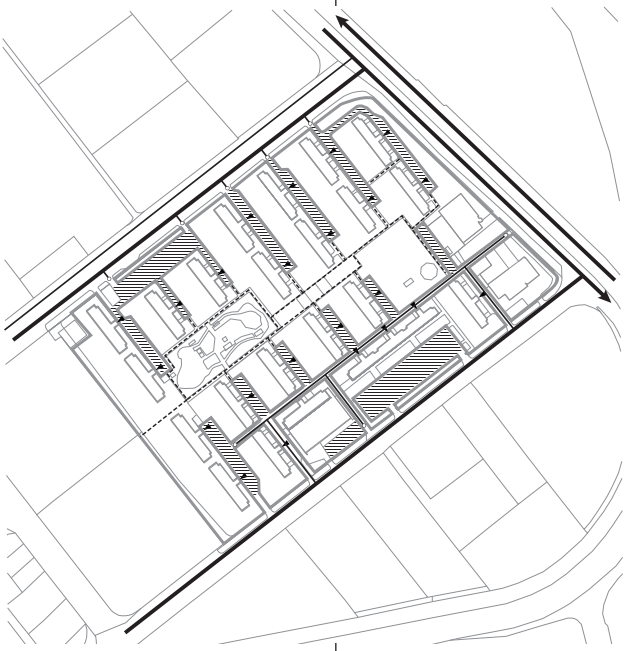
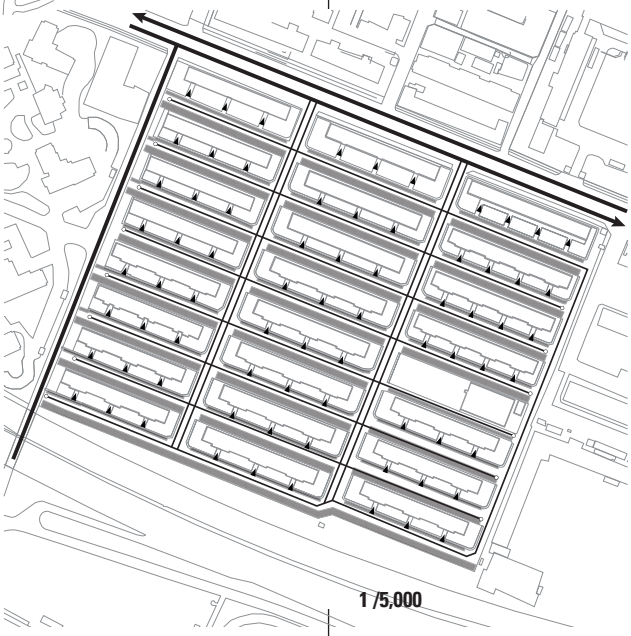


1 /7,500



1 /5,000

- Building Entrance
- Main Vehicular Circulation
- Secondary Vehicular Circulation
- Pedestrian Circulation
- Parking

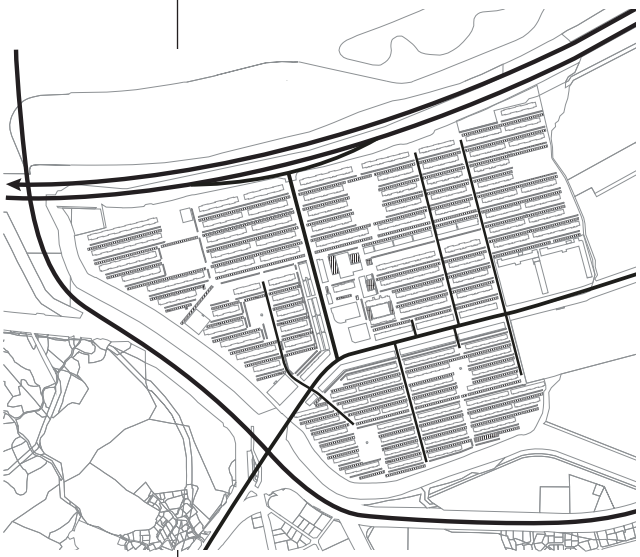
01/ 1962
MAPO
APARTMENTS

02/ 1970
HANGANG MANSION
APARTMENTS

03/ 1970
YEOEUIDO SIBUM
APARTMENTS

1960 1965 1970

1 /15,000



1 /15,000

1 /15,000

04/ 1972
BANPO
APTS

05/ 1975 JAMSIL
2-TANJI APTS

06/ 1975
HYUNDAI
APKUJEONG APTS

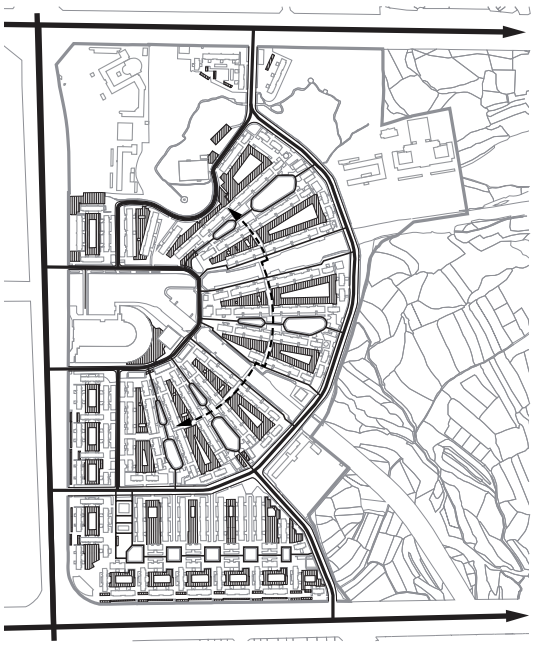
07/ 1983
JAMSIL
5-TANJI
APTS

1975

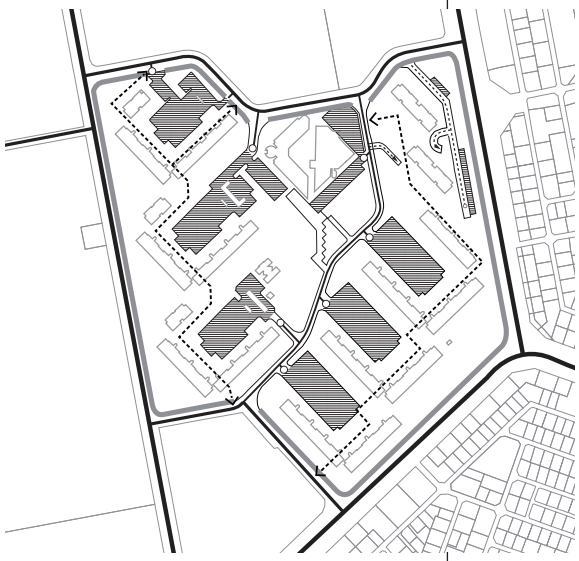
1980

Figure 15-2. Synthesis of circulation networks from the Case Studies in Volume 02 (II).

1 /15,000



1 /15,000



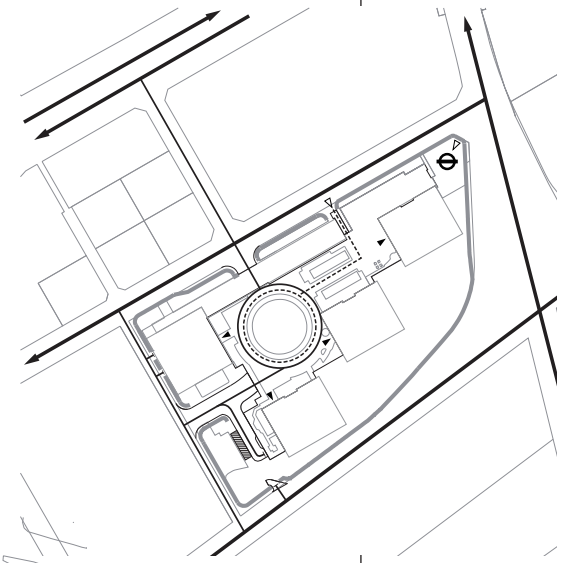
1 /10,000

- Building Entrance
- Main Vehicular Circulation
- Secondary Vehicular Circulation
- Pedestrian Circulation
- Parking
- Parking Entrance

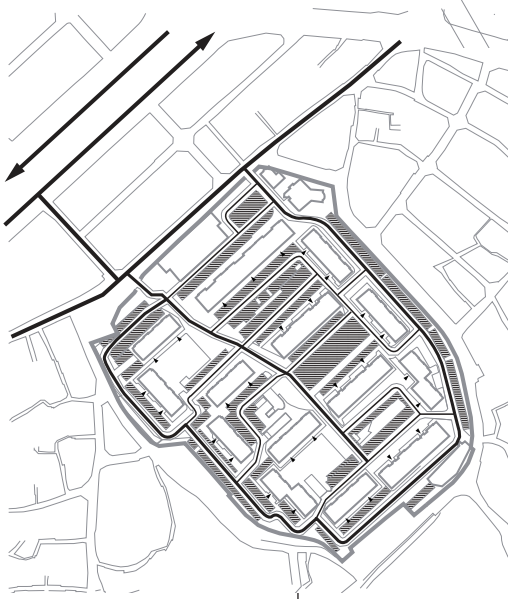
07/ 1983 JAMSIL 5

08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

09/ 1986
OLYMPIC
VILLAGE APTS



1 /5,000



1 /5,000

1 /15,000

10/ 1993
MAPO
SAMSUNG APTS

11/ 1999
SAMSUNG TOWER
PALACE APTS

12/ 2008
JAMSIL
RICENZ APTS

CHAPTER 16
APAT'U TANJI CASE STUDIES: COMMERCIAL FACILITIES

The location of commercial facilities within mass housing estates has already been addressed in Chapter 11[1]. This chapter will discuss how the evolution of commercial facilities over the period of study resulted in an entirely new building typology that is tightly related to mass housing in Seoul.

The importance of local retail shops for the self-sufficiency of residential neighborhoods had already been argued by Clarence Perry in the 1920s. At the time, the author envisioned groups of small shops lined up next to each other to form clusters near the main intersections surrounding neighborhood units, and described them in the following way: *'The average business frontage per family provided by the plan is about 2.3 feet'* (Perry, 1929, p. 37).

The incremental development of commercial facilities in Seoul's *apat'u tanji* consolidated a completely new urban lifestyle, in combination with two other critical innovations brought by the emergence of the consumer society in South Korea during the 1960s: the automobile and the refrigerator.

The design of the Mapo Apartments of 1962 did not contemplate any specific facility for commercial activities. But since refrigerators were not yet a common fixture of Seoul's homes, residents depended on daily shopping in the vicinity. Thus, shops supplying daily needs were placed in the basement of the Y-plan buildings almost as an afterthought.

The Hangang Mansion Apartments were the first ones to incorporate commercial spaces as an integral part of the project. This was due to the location of the estate, on the reclaimed banks of the river far from the consolidated city. Since the *tanji* was part of a narrow strip of land, individual retail spaces lined up the central vehicular artery of Icheon-dong, forming a main street or a strip mall of sorts. The type would be known as 노선상가 (*no-seon sangga*, or 'linear shopping street'). Shops took the lower two floors of the residential blocks facing the street, which otherwise would have been difficult to sell due to the noise from the road. An arcade extended retail spaces onto the sidewalk, creating a covered promenade recalling those from European downtowns.

With some variations, the typology of individual shops lined up along main streets would be employed as well in the following years in *tanji* in similar isolated conditions: Yeoeuido Sibum, Banpo, Jamsil-2 tanji, and Apkujeong. Nevertheless, these other cases did not commit only to this type and engaged in experimentation with other commercial types simultaneously: a traditional market at the end of the linear strip in Yeoeuido; or individual commercial buildings in the case of Banpo and Apkujeong. Those were unspecialized buildings were the different floors were occupied by small retail spaces, generically called 상가 (*sangga*, or 'commercial building').

1 See '11.3 Location of Commercial Facilities' in Chapter 11, Volume 01.

The *sangga* of the Jamsil-5 tanji Apartments evolved into a full-blown building type in its own right, superseding the *no-seon sangga* and establishing what would become the most used commercial building type in mass housing estates to come. Its main characteristics are:

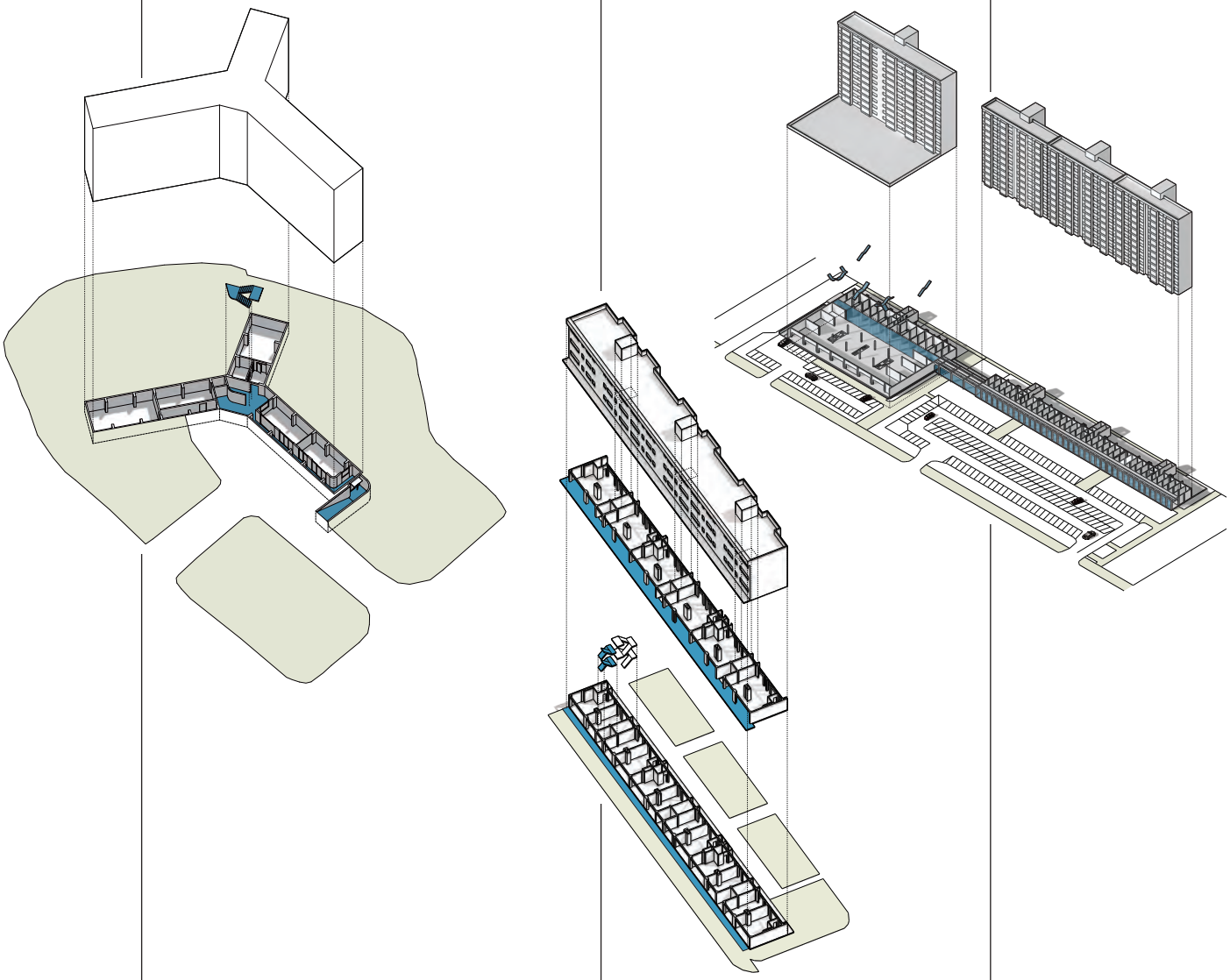
- A stack of free-plan floors that could be partitioned in different ways in order to accommodate businesses of different sizes.
- The free plan was made possible by the use of a structure of reinforced concrete columns.
- Cores of services such as elevators, staircases and bathrooms were located in the periphery not to interfere with the free plan.
- They would be typically located in the boundary of the housing estate, accessible to outsiders.

The type was slightly modified in the design of the Asian Athletics Apartments and the Olympic Village Apartments in order to accommodate functions related to the temporal events they were built for. This symbolic function transpired in the civic and representative character of the facilities, compared with the pragmatic and dull design of the typical ones. They were also located in a strategical position both accessible from the outside but at the same time framing the central public spaces were special events of the games were held.

The commercial facilities built afterwards consolidated the *sangga* typology, keeping the characteristics described above but increasing their efficiency by enlarging the floor plates and increasing the number of floors. The Tower Palace Arcade deserves special mention due to its resemblance to a high-end department store, appropriate to the status of its target customers. Since the renovation of tanji #1, 2, 3 and 4 in Jamsil took place simultaneously, the location of their respective sangga near the main intersections of the area contributed to formalize shopping clusters not dissimilar to the ones intended originally by Perry, albeit with increased density.

It is important to mention the increase in the range of types of services offered. While the Mapo Apartments of 1962 offered basic daily needs such as a rice store, a laundry, a shoe repair shop, a butcher, a hair salon, a fishmonger and so on; the breadth of services increased over time to include medical centers, banks, private educational institutions, libraries, spas, travel agents, opticians, real estate agents, interior remodeling services, different types of restaurants, supermarkets, kindergartens, etc. Overtime the buildings would connect directly to nearby subway stations and underground parking facilities, performing thus as genuine thresholds between the housing estate and the city. The concentration services in one spot contributed to the perceived higher comfort of living in apartments compared to other residential options.

Figure 16-1. Synthesis of commercial facilities from the Case Studies in Volume 02 (I).



basement shops

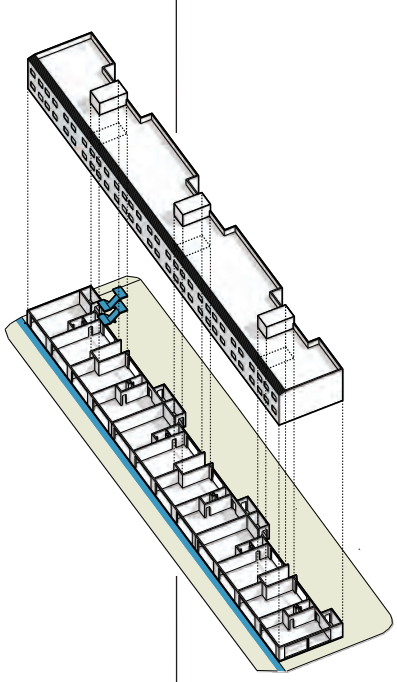
01/ 1962
MAPO
APARTMENTS

linear shopping street
(노선상가, no-seon sangga)

02/ 1970
HANGANG MANSION
APARTMENTS

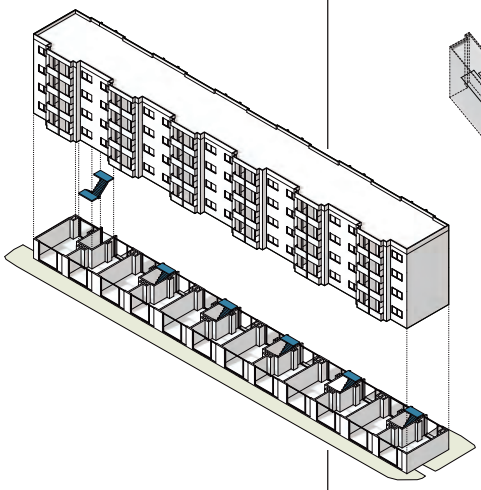
linear shopping street
(노선상가, no-seon sangga) and market

03/ 1970
YEOEUIDO SIBUM
APARTMENTS



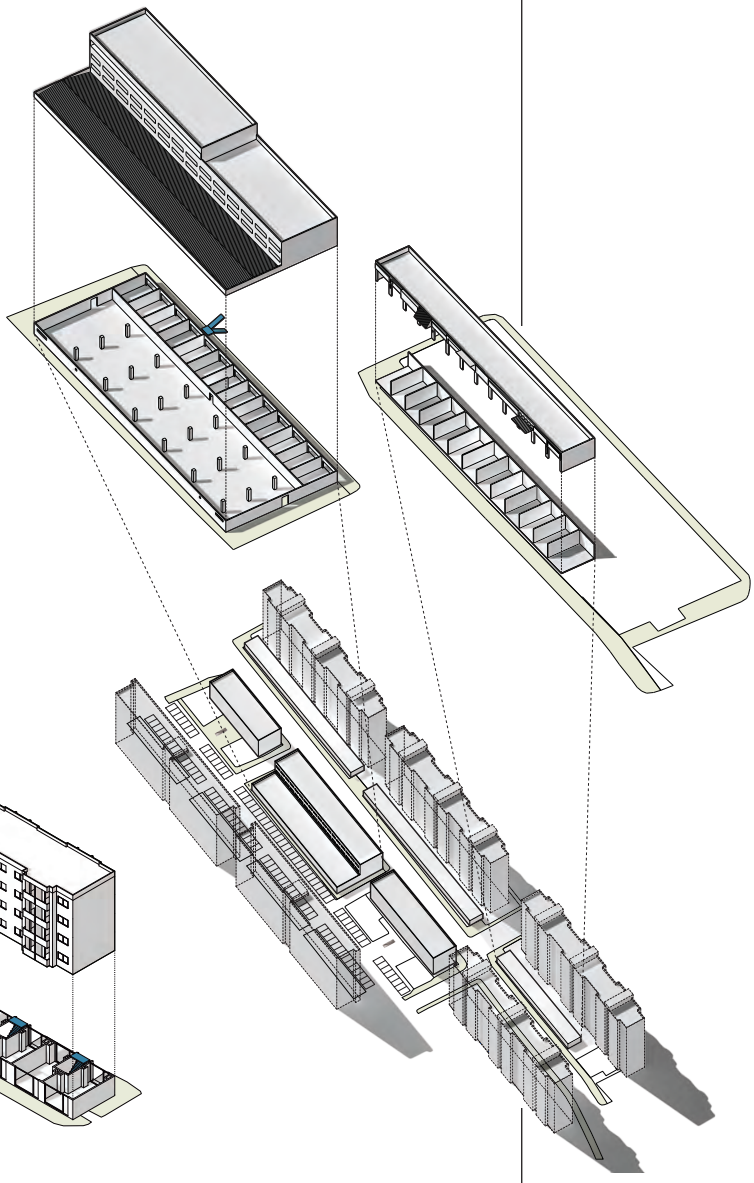
linear shopping street (노선상가, **no-seon sangga**)

04/ 1972 BANPO APTS



linear shopping street (노선상가, **no-seon sangga**)

05/ 1975 JAMSIL 2-TANJI APTS



linear shopping street (노선상가, **no-seon sangga**) **and market**

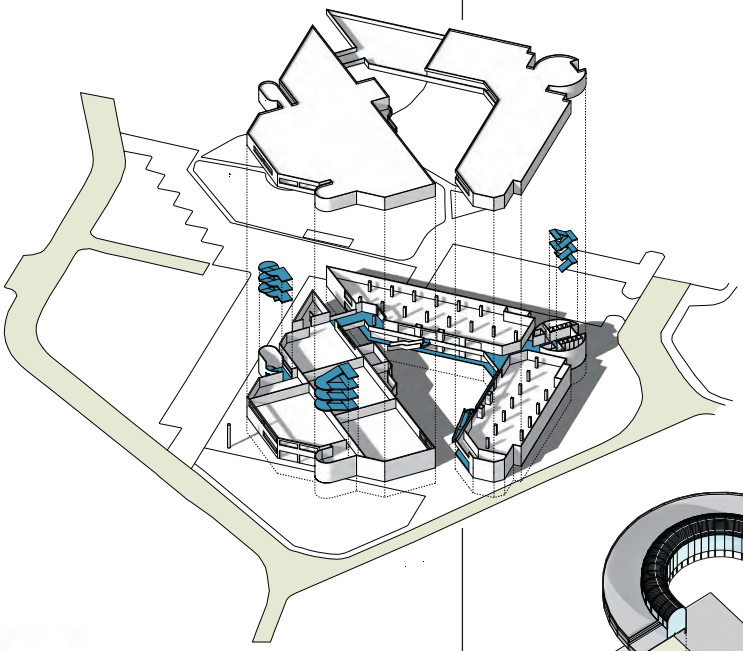
06/ 1975 HYUNDAI APKUJEONG APTS

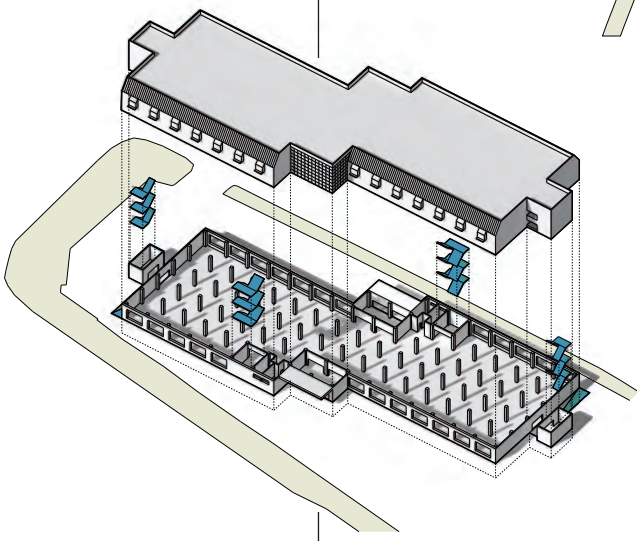
07/ 1983 JAMSIL 5-TANJI APTS

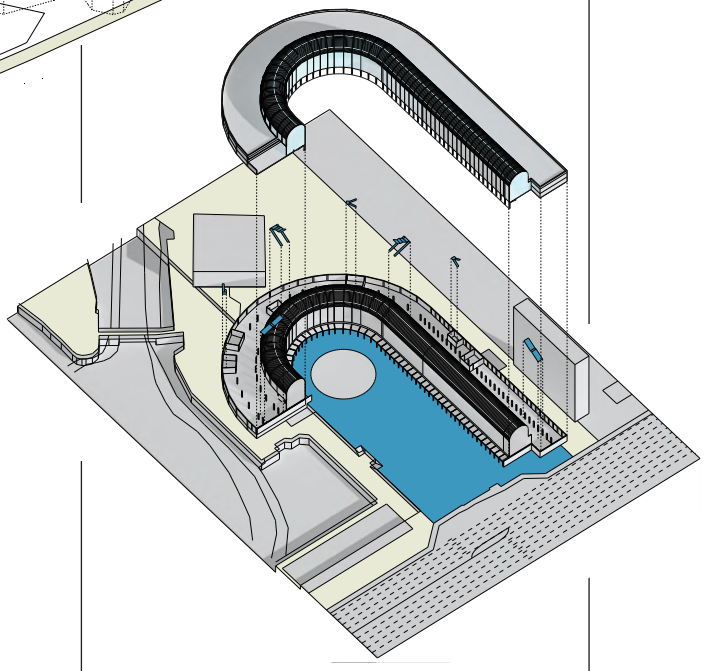
1975

1980

Figure 16-2. Synthesis of commercial facilities from the Case Studies in Volume 02 (II).







commercial arcade
(상가, sangga)

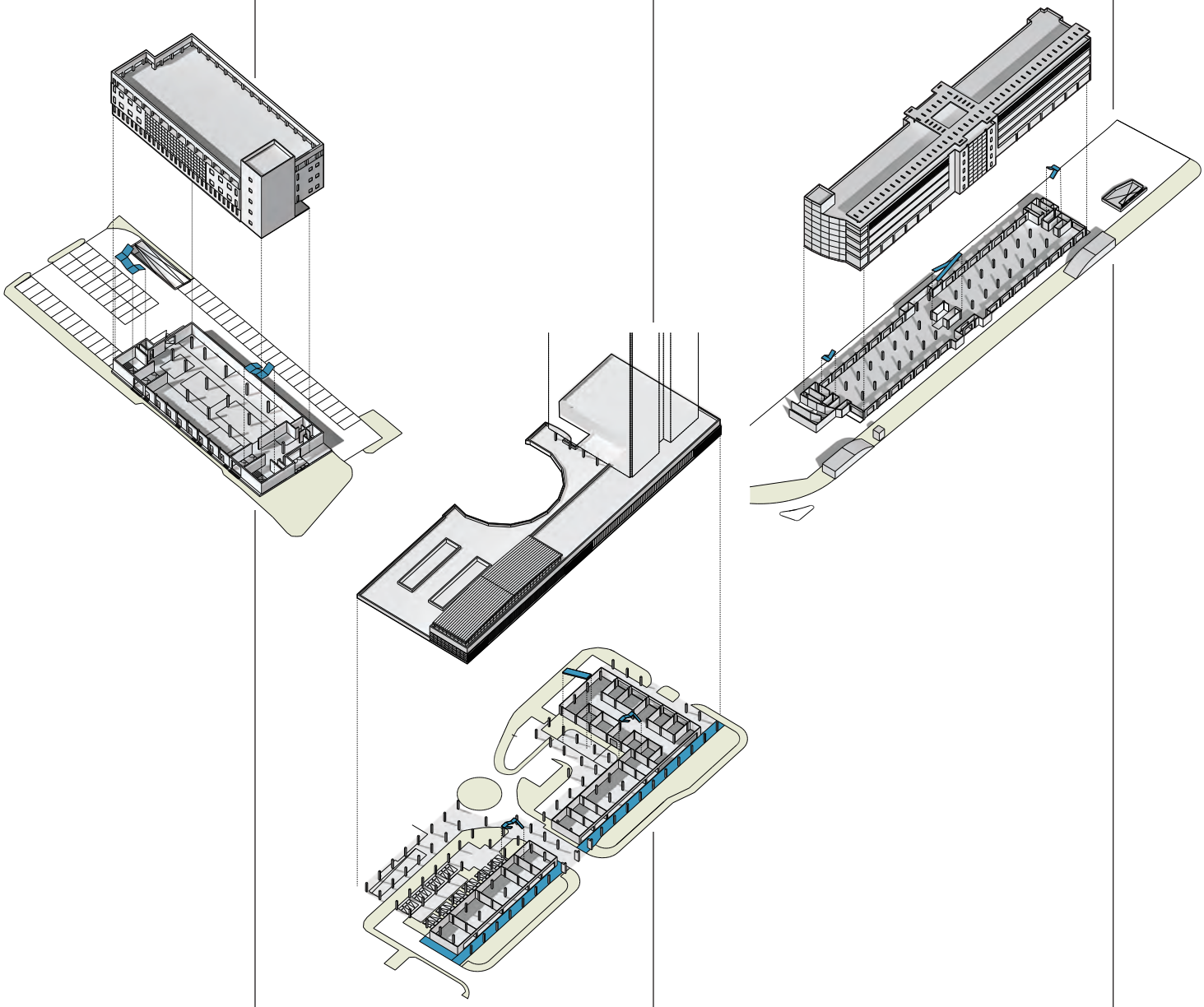
07/ 1983 JAMSIL 5

commercial arcade
(상가, sangga)

commercial arcade
(상가, sangga)

08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

09/ 1986
OLYMPIC
VILLAGE APTS



commercial arcade
(상가, sangga)

10/ 1993
MAPO
SAMSUNG APTS

commercial arcade
(상가, sangga)

11/ 1999
SAMSUNG TOWER
PALACE APTS

commercial arcade
(상가, sangga)

12/ 2008
JAMSIL
RICENZ APTS

CHAPTER 17
APAT'U TANJI CASE STUDIES: BUILDING TYPE

The Building Type category in the Housing Estates Case Studies includes both the typology of residential buildings and the housing unit types in them[1]. This chapter will focus only on building typologies, since domestic layouts are the object of an in-depth analysis in Section 4 - The Scale of the Housing Unit[2].

The evolution of apartment building types over the period of study revolved around three main aspects:

- Building typologies which had been developed abroad were adapted in South Korea for different needs, with different targets and under very different situations. Built forms were similar but the social, political, economic and cultural context were very different. This adaptation initiated a process of creative borrowing which eventually led to the development of autochthonous building forms.
- The experimentation in building types was mainly geared towards achieving higher residential density and better construction efficiency. This led over time to a high degree of standardization of building solutions. But the Case Studies also reflect concerns for the reinterpretation of traditional housing quarters and the careful orchestration of spatial conditions to benefit the formation of communities within the complexes.
- The technical solutions adopted in the pursuit of higher buildings – mainly structural, but also in terms of access strategies, mechanical systems and others – had a direct impact on the internal layout of the units and on the way they were aggregated around common access strategies; and thus in shaping the lifestyle of residents and their interactions with neighbours. The standardization of building solutions brought the standardization of lifestyles.

1 See chapters 7 to 18 in Volume 02.
2 See subchapter '22.6 Timeline: Evolution of the Standardized Unit Layout' in Chapter 22, Volume 01.

In spite of the Mapo Apartments being heralded as the first mass housing complex in Korea, collective housing buildings had been built in Seoul during the precedent decade and during Japanese colonial times. They typically featured five-storey walk-up linear blocks with two units per landing. Thus the 6-storey Y-plan type adopted for Mapo was introduced as an innovation. The plan was supposed to optimize vertical circulations, since a central core served three residential wings simultaneously. But soon it became evident this optimization came at the cost of casting a large footprint on the parcel, greatly reducing overall residential density. Thus, the Y-plan buildings were complemented with linear blocks in the second phase of the project.

5-storey walk-up linear residential blocks with two housing units per floor were one of the most widespread modern residential types, a global architectural form. They fulfilled the need for construction efficiency; they matched a wide range of social and economic conditions and lifestyles across the globe; and they were very well suited to complement the *zeilenbau* site planning approach and the minimum dwelling prototypes developed simultaneously during the decades of the 1920s in European industrialized countries. A substantial amount of research and expertise on them was available and they had been discussed at length in the second and third Congrès Internationaux d'Architecture Moderne (CIAM) in 1929 and 1930[3].

The type had been introduced to Seoul during the colonial period, and references such as the Jong-Am Apartments built by the Seoul Municipal Government in 1958 were readily available[4]. They became the bread and butter of the initial implementation of mass housing estates in Seoul, with cases such as the Hangang Mansion Apartments, Banpo, and Jamsil-2 tanji. Because of their low height and relatively narrow structural bays they could easily be built with simple post-and-beam reinforced concrete structures with brickwork infill.

The main adaptation the type underwent in Seoul was its rotation ninety degrees in order to face the south, following long-established cultural preferences. This rotation would have deep implications in the development of the interior layouts and on the development of building types themselves, as it would prevent the deployment of double-loaded corridor types, since the units facing north would have been deprived of direct sunlight[5]. Another relevant adaptation was the adoption of the type for affluent families. While the type had originally been developed to house industrial workers in minimal units, the sizes of apartments in Hangang Mansion ranged between 89m^2 to 168m^2, and comfortable duplex types were offered in Banpo.

In the same year the Hangang Mansion Apartments were built, a denser type was being experimented further down along the river with the Yeoeuido Sibum apartments. The higher costs of building on reclaimed land needed to be balanced out with more residential density, thus the height of the blocks was increased to twelve floors. A direct consequence of that was the inclusion of an elevator with a shared corridor on the northern side of the block to access the units. The structure was still a post-and-beam reinforced concrete system. The innovations introduced set up important precedents for housing complexes built since the second half of the 1970s, such as the Apkujeong Apartments of 1976. With them, Hyundai Construction introduced a new structural method in order to build up to fifteen floors: load-bearing walls. This would have a decisive impact on the layouts of the units, since structural walls favored plans composed of rigorous arrangements of rectangular cells, thus greatly limiting the flexibility of the units. The *tanji* stands as a testament of the experimentation carried by the private construction company in order to come up with the ideal building type suited to high-rise residential blocks for the upper middle classes. Some buildings feature common corridors to the north with a shared elevator, while others have shared cores with two units per floor. Others even have a secondary vertical core without elevator

3 See '5-storey Walk-up Linear Residential Blocks' in 'Urban Morphology References', Chapter 19, Volume 02.

4 See 'Jong-am Apartments' in 'Building Type References', Chapter 19, Volume 02.

5 As seen in subchapter '22.6 Timeline: Evolution of the Standardized Unit Layout' in Chapter 22, Volume 01.

accessing directly the kitchens for domestic helpers. The typology of high-rise linear blocks with load-bearing walls reached the peak of its development with the fifteen-storey high, 110-meters long linear blocks of Jamsil-5 tanji, arranged within a *zeilenbau* layout. Soon after, the introduction of site planning based on residential clusters would also bring innovations in building types.

The Asian Athletics Apartments and the Olympic Village Apartments, developed by the administration, exemplify this new type. Residential buildings completely lost the shared corridors to the north and a vertical core with an elevator and two units per floor became the norm. These building modules were not free-standing but integrated within an aggregation of similar modules adjacent to each other, forming clusters of small communities within the larger complex. All units in the same module were identical due to the use of load-bearing walls and the efficient formwork technologies employed to build them, so diversity of unit sizes within a cluster was achieved by grouping modules of different sizes and layouts. The height of the modules within a cluster varied according to the overall composition, reflecting a concern for the design of the facades and for the reinterpretation of the spatial qualities of traditional living quarters over purely quantitative or efficiency concerns. For instance, the Olympic Village Apartments offered five different basic types and a total of twenty variations in order to cater to different household needs, and facades were clad in precast concrete panels for a better finish.

When a set of new conditions appeared at the end of the 1980s –the shift to private development; the need to increase residential density; and the proliferation of renovations of older complexes- the innovations introduced in this two cases were quickly adopted, even though their community-building agenda and their reinterpretations of traditional living quarters were lost in pursuit of the optimization of residential density. The renovation of the Mapo Apartments by Samsung C&T in 1993 offers a good example of this trend. Building types and cluster formations were quickly standardized, in parallel to the standardization of residential units. Building height was increased to 17 floors and there was only one basic housing type, to which more or less rooms were added in order to provide a range of sizes.

The liberalization of apartment prices after the 1997 East Asian Financial Crisis opened the market to high-end residential types. The Tower Palace was the first luxury condominium in Seoul. The demanding constructive and structural requirements of the high-rise residential tower typology brought a rupture with the evolution of mass housing residential types in Seoul up until then.

The Jamsil Ricenz Apartments of 2008 showcase the evolution of residential types initiated by the renovation of the Mapo Apartments fifteen years earlier. In spite of the introduction of important innovations such as the underground parking plinth over the whole site; the extension of a continuous landscape at street level; the doubling of building heights up to 33 stories; and the advent of new technologies, aspects related to community-building and to the definition of lifestyles -cluster arrangements; building types; and residential unit layouts- underwent very little changes and stuck to tested and proved solutions taken for granted both by developers and the market, catering to an ideal middle class family with two children.

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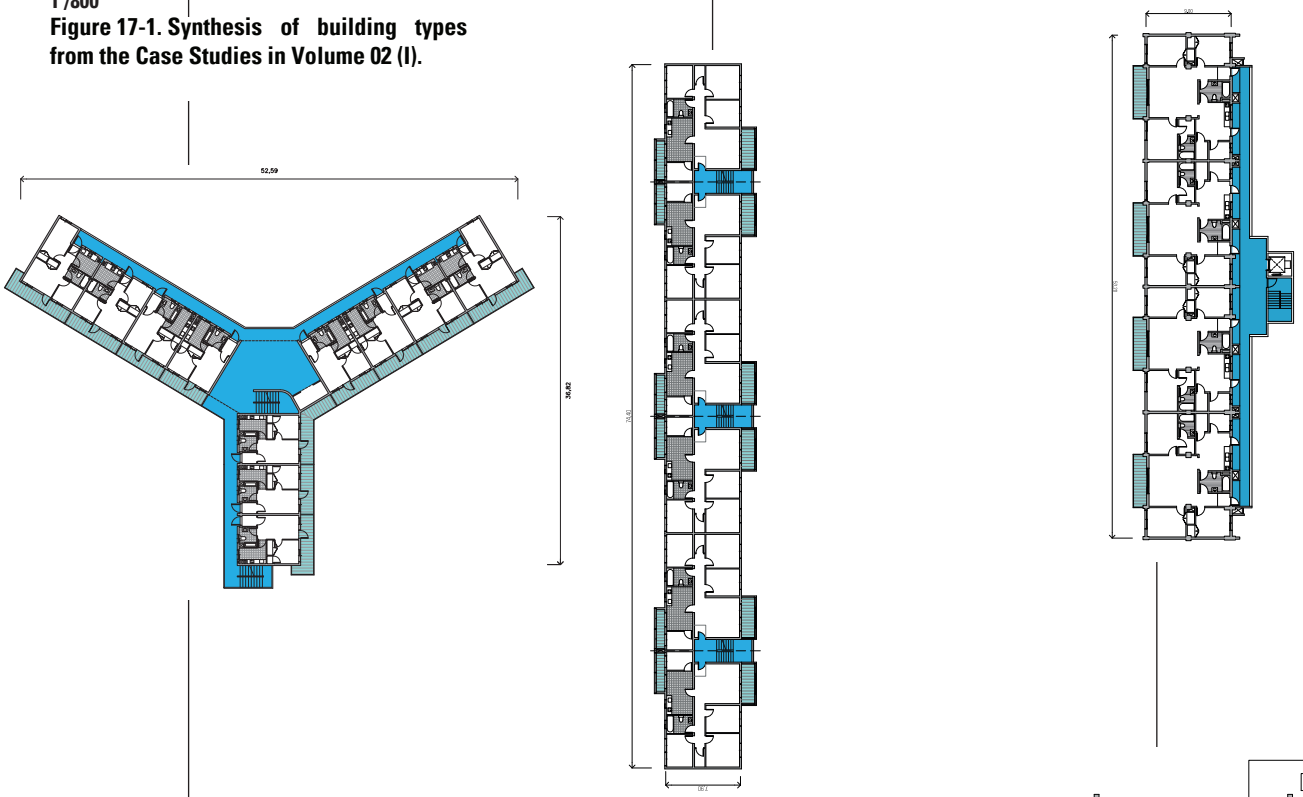
Figure 17-1. Synthesis of building types from the Case Studies in Volume 02 (I).



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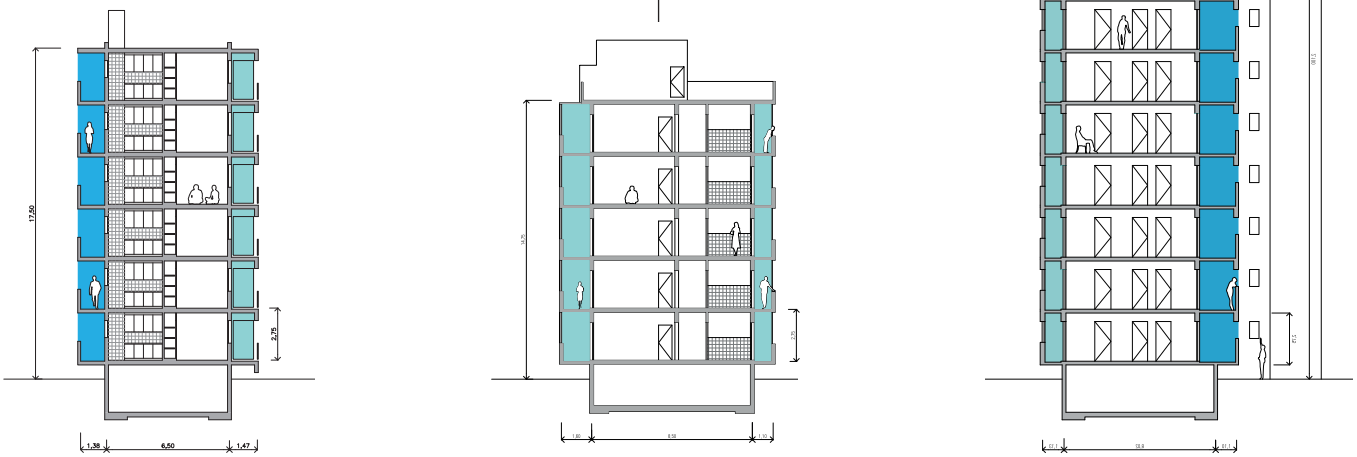

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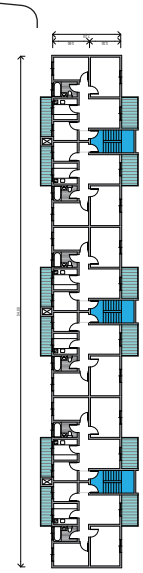

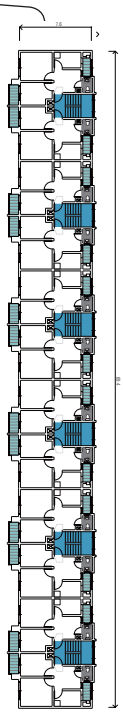

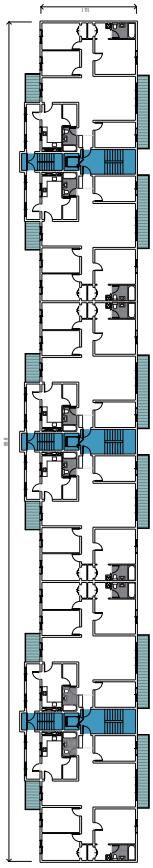

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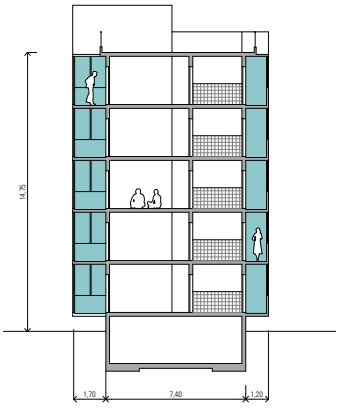

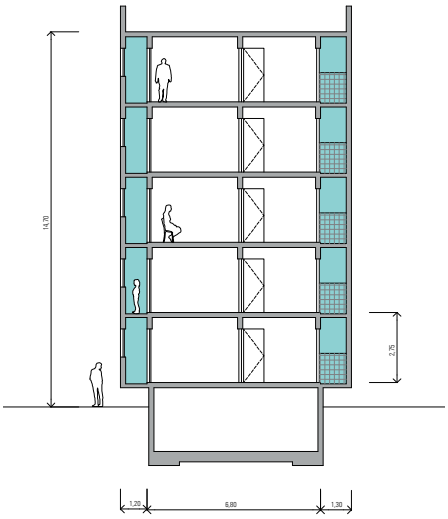

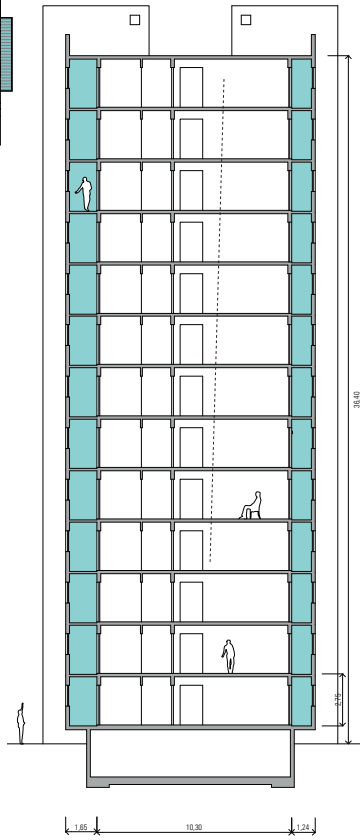

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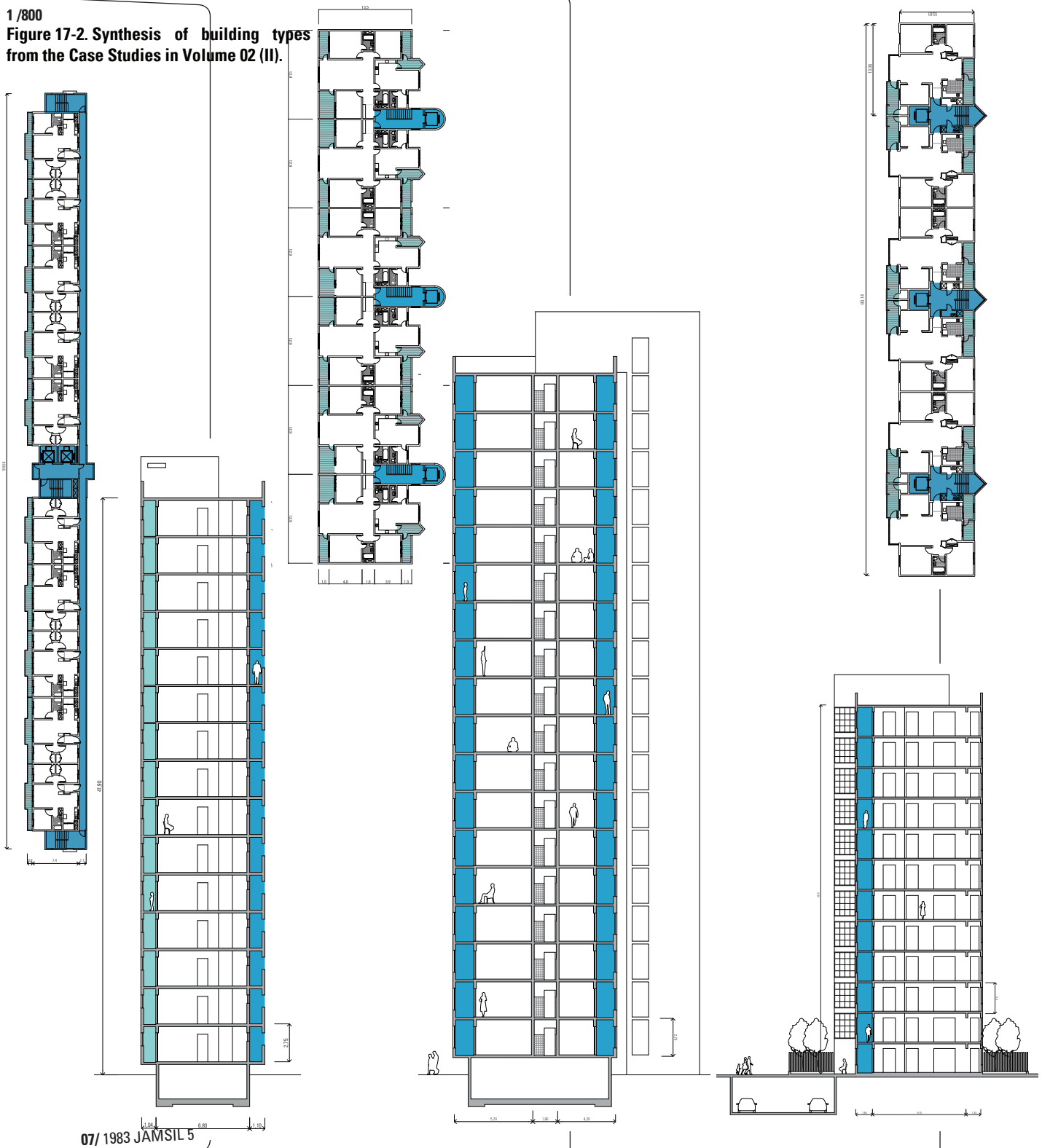
Figure 17-2. Synthesis of building types from the Case Studies in Volume 02 (II).



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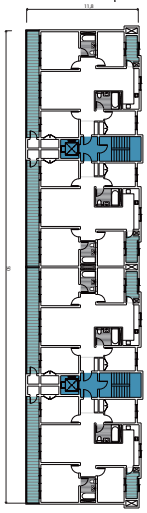

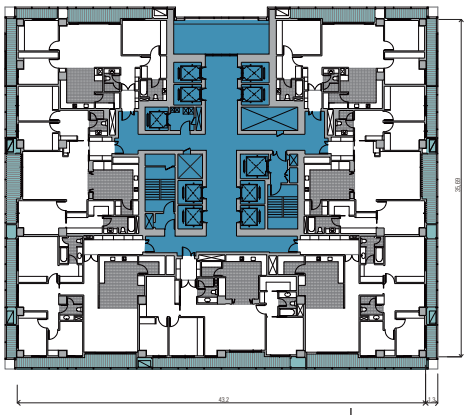

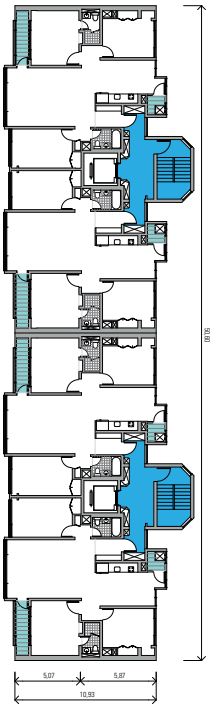

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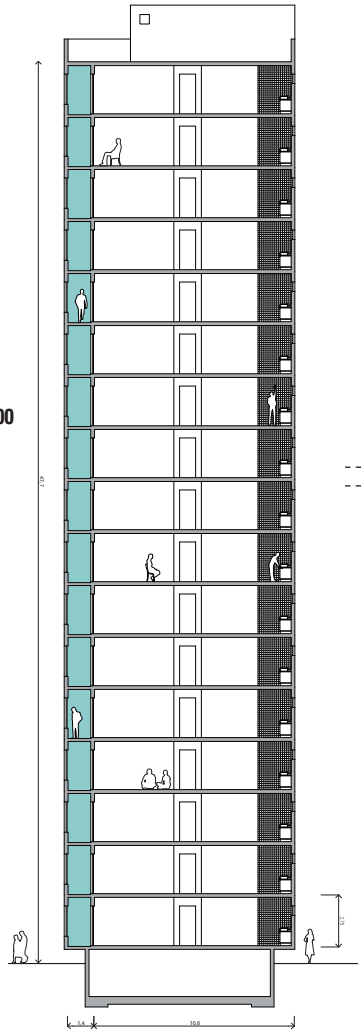

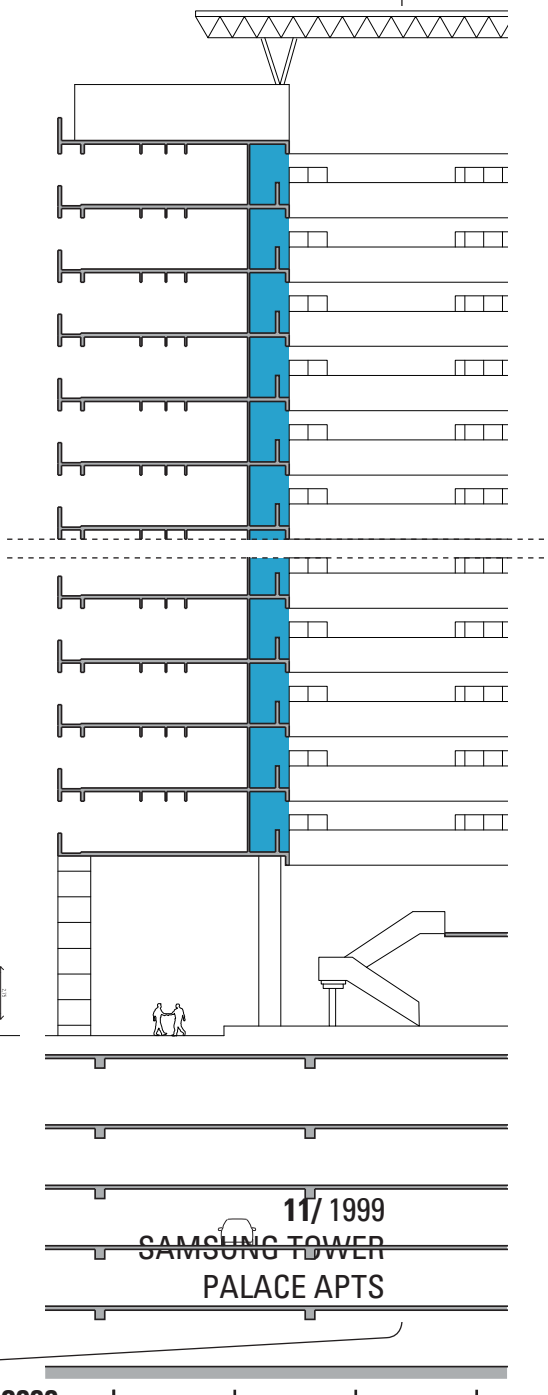

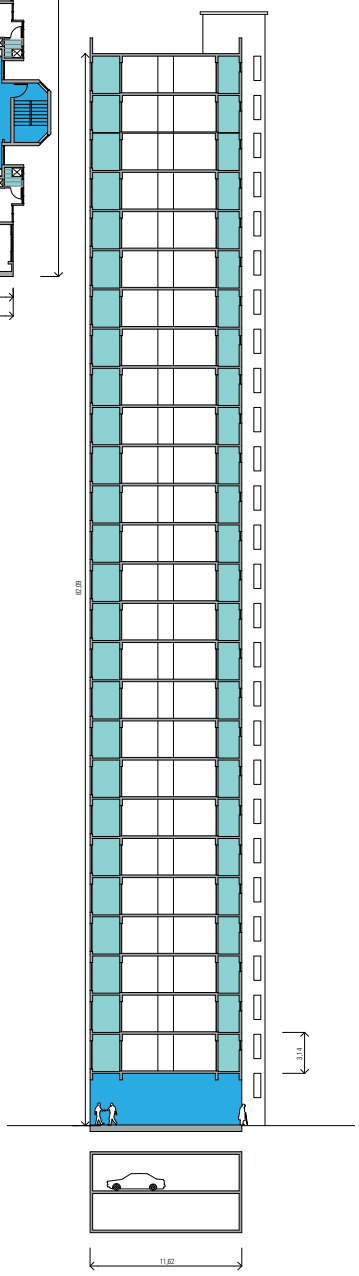

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CHAPTER 18
APAT'U TANJI CASE STUDIES: BOUNDARIES

The analysis of the boundaries in the case studies (see chapters 7 to 18 in Volume 02) differentiates two scales. *'Boundary as an Urban Condition'* deals with the setting of the housing complex as a single property within wider urban systems or plans, as the condition of boundary does not only depend on the physical treatment of the edge but also on the degree of connectivity to adjacent urban fabrics allowed by the surrounding street grid, networks of green spaces, topography, etc. For instance, it is common the layout of new grids of avenues as a tool to define superblocks as self-contained units of urban development, as developed in '8.4 Street Grids as Frameworks for Urban Development' and '8.5 The Urban Block as a Unit of Development', in Chapter 8, Volume 01. As a complement to that, *'Definition of the Edge'* focuses on the formalization of the boundary condition within the housing complex.

18.1 BOUNDARY AS AN URBAN CONDITION

There are different types of influences from urban conditions external to the housing complex which may affect its isolation. In many cases, different conditions would reinforce each other. They are:

Site as a cyst: a housing complex developed in an existing parcel is isolated from its immediate context because the original parcel used to be fenced out and the neighborhood grew around it without intending to relate to it. This would be the case of the original Mapo Apartments, built on the site of a former prison. That is also the case of the renovation of older housing complexes, where the new designs have to fit in an urban context where the layout of roads, pedestrian crossings, subway entrances and other means of access were already pre-determined, as in the renovation of the Mapo Apartments, or in the Jamsil Ricenz Apartments.

Site landlocked by infrastructures: this condition is typical of housing complexes developed within larger urban projects involving the layout of new large-scale infrastructures. The Han River Development Plan (1967-69 and 1981-86)[1] is paradigmatic of this, since the construction of embankments and highways on top of them tended to confine the *tanji* developed on land reclaimed from the river. The Hangang Mansion Apartments, the Banpo Apartments, Jamsil-2 tanji, Apkujeong Apartments, and Jamsil-5 tanji illustrate this. One

1 See '3.3 Han River Development Plan, 1967-69' in Chapter 3, Volume 02.

of the aims of the Yeongdong Land Readjustment Projects was to obtain land to build the Gyeongbu Expressway through Gangnam[2]. This left all the blocks on the flanks of the infrastructure landlocked against it.

Site landlocked by topography: Seoul is characteristic for its rugged terrain and the rich hydrology that drains it[3]. The steep topography has been used to locate housing complexes on high ground in order to isolate them and provide views. The Banpo Apartments exemplify this, since their southern and western boundaries are defined by the Banpo stream and the Seodal-san hills[4].

Site corresponding to a superblock within a new street grid: in cases where the implementation of street grids was used as a double strategy to both provide vehicular access and subdivide the land so it could be sold to developers, it was common to consider the blocks formed as units of development and management of urban growth[5]. In those cases, the same avenues providing vehicular access to the site acted as strong barriers which isolated it from its neighbors. Street grids act as an urban *bento box*[6], where the different compartments do not have contact among them and thus can contain completely different courses without contact. The Yeoeuido Sibum Apartments are exemplar of that, as well as the Olympic Village Apartments and the Tower Palace.

Site corresponding to a superblock within a new town: this is a variation of the previous case. It is important to establish the difference, since the planning of a new town as a comprehensive effort provides a stronger case for the pursuit of shared open space strategies among the different superblocks. This was rarely the case in Seoul, as exemplified by the t*anji* developed in Jamsil – Jamsil-2 tanji, Jamsil-5 tanji and the Asian Athletics Apartments. In contrast, the satellite cities developed in the Metropolitan Area since 1989 featured a higher integration of green spaces and amenities.

18.2 DEFINITION OF THE EDGE

The analysis of the cases studies shows an evolution in the treatment of the edge condition of *apat'u tanji*. From a simple fence, they eventually developed into carefully staged systems of layers that mediate between the tanji and the surrounding city. The main steps in this evolution have been:

Fence: The masonry fence around the Mapo apartments was inherited from the former prison on the site, and it followed its logics of seclusion. There were only two entrances on the northern side, controlled by security guards. The southern portion of the fence was reinforced by the topographical drop between the surrounding neighborhood and the level of the housing complex. This basic fence, typically employing a combination of masonry, metal fencing and / or chain-link fencing, would be the most widely employed from then on, either as the only edge strategy or in combination with others.

Linear commercial facilities as interface: The façade of the Hangang Mansion Apartments facing the main street in Icheon-dong featured a two-storey linear commercial facility with three residential floors above. It acted as an interface between the *tanji* and the surrounding context, proposing a typical edge condition that could be replicated along the street in order to configure a larger urban strategy and an provide an identity to the area. Unfortunately, this typological approach to the edge condition pursuing the articulation with larger scales of planning would not be common in later complexes.

Buffers of interstitial spaces: The Yeoeuido Sibum Apartments were the first complex where the edge condition was produced through a layering strategy. The layers were: first a low fence; then a landscape buffer with tall deciduous trees which provided privacy to the residential blocks; and then the parking lots of each block, each with their own access from outside. From there, only

2 See '3.4 Planning Of Gangnam: Yeongdong Land Readjustment Projects I & II' in Chapter 3, Volume 02.
3 See Figure 1-20 in Chapter 1, Volume 02.
4 See Case Study #4 in Chapter 10, Volume 02.
5 See '8.4 Street Grids as Frameworks for Urban Development', in Chapter 8, Volume 01.
6 Japanese name for a single-portion take-out meal in a box carrying different kinds of food, organized in separate compartments.

pedestrians could access the vehicular-free core of the complex. This buffer was widened in certain spots to allocate amenities such as a church, a leisure center and commercial facilities, so they could be accessed from outside.

Thresholds with larger green networks: in complexes land-locked by existing natural features such as streams or hills which over time have been articulated within metropolitan green networks, the boundaries of the *tanji* have become gateways to those systems, attracting leisure and sports facilities. In some cases built before the conception of such large scale networks since the 1980s, this newfound threshold condition of the boundary has come after the fact, bringing in new potentials to existing tanji, such as in the Banpo Apartments of 1972. In other cases, as in the Olympic Village Apartments, the threshold to these larger urban systems does not take place at the boundary but along the streams which cross the complex through the middle, bringing the connective potential of the boundary to articulate the whole complex. The potentials of this articulation to wider urban leisure and green systems would be further explored in the satellite cities built in the Metropolitan Area since 1989.

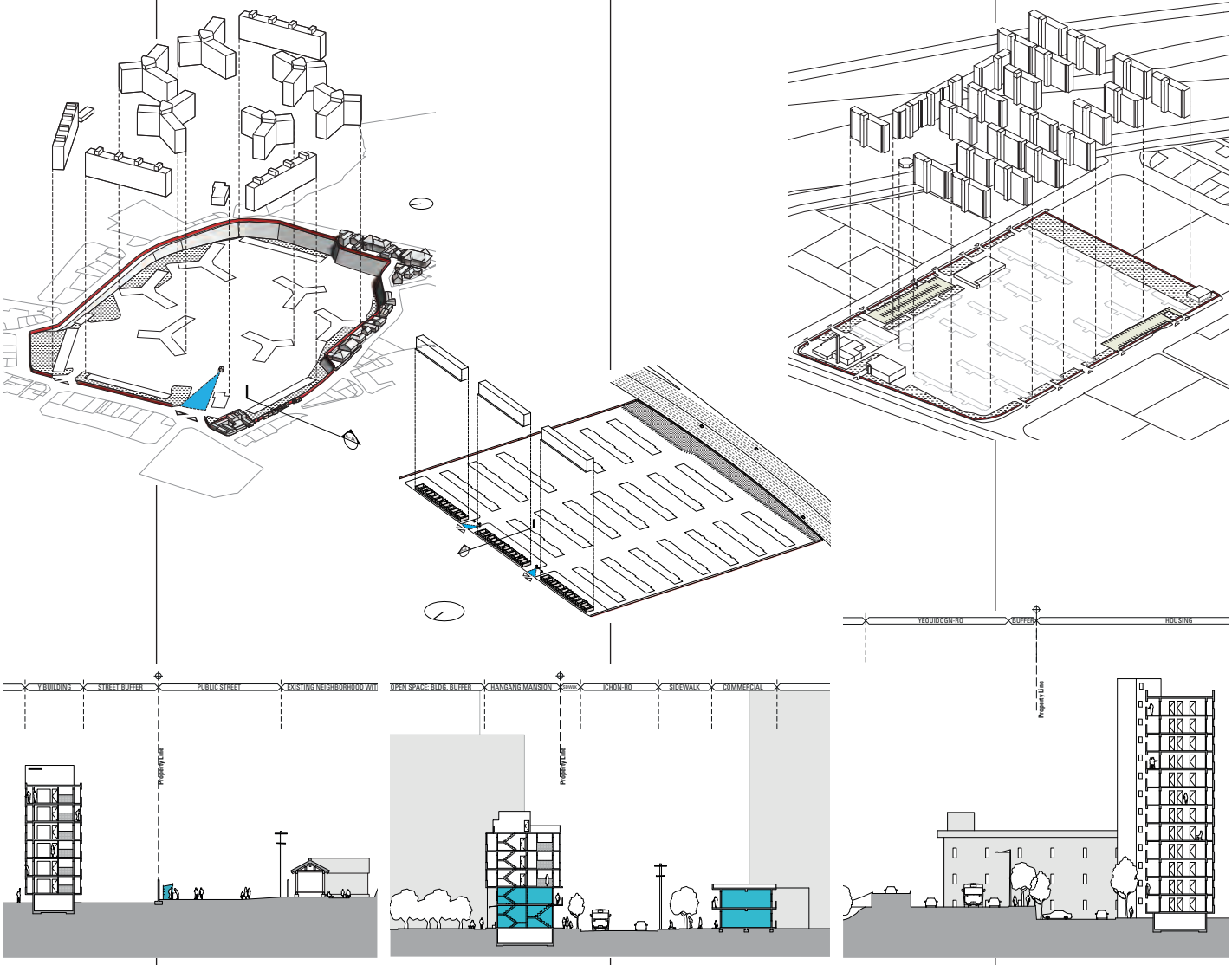
Protective internal layouts: another common strategy is the arrangement of building masses inside the complex so they shelter the central core from the outside, creating a secluded atmosphere. In the case of the Jamsil-2 tanji this is achieved by creating a maze-like internal structure with low residential blocks, and in later *tanji* with taller buildings this will be pursued by composing virtual vertical facades with the external sides of the clusters, as in the Asian Athletics Apartments, the Jamsil-5 tanji or in the renovation of the Mapo Apartments. In the Olympic Village Apartments, the boundary condition created by the taller perimetral blocks was used to produce lighting effects during the celebrations of the Olympic Games.

Complex sectional sequences: the increase of residential density, the reduced site footprint, the exclusivity of the residences, and the mixed-used character of the plinth in the Tower Palace Apartments prompted the deployment of sophisticated spatial strategies which take advantage of the different levels in the base of the towers in order to provide different permeability to the public, semi-public and private areas of the complex.

Landscape strategies: the removal of parking spaces from the street level in Ricenz Apartments opened the door to the development of the ground plane as a continuous landscape from where the residential towers emerge, emulating the vision of 'towers in the park' by Le Corbusier on top of an artificial landscape. Because of the high level of standardization of residential building types and unit layouts at this point, landscape was embraced as a unique feature which differentiated complexes from the different mass housing brands. The development of landscape features also affected the design of the boundaries of the complexes, in an attempt to soften their image while still maintaining their isolation.

These strategies are often used as a combination in order to deal with different edge conditions in the same *tanji*, or in order to enhance their effect. For instance, in the Asian Athletics Apartments and in the renovated Mapo Apartments there is a combination of fences with buffers of interstitial spaces and protective internal layouts which reinforce each other. Also, the seclusion of the housing complexes relies as well upon the surveillance of an extensive crew of security guards and cameras.

Figure 18-1. Synthesis of boundaries from the Case Studies in Volume 02 (I).



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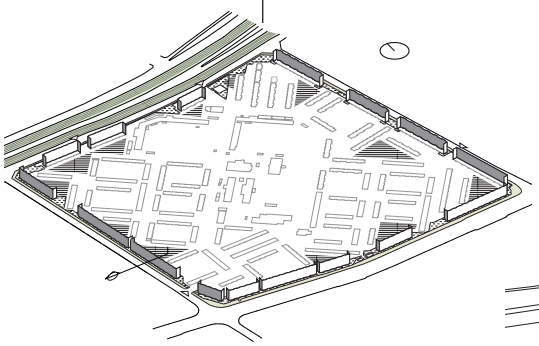

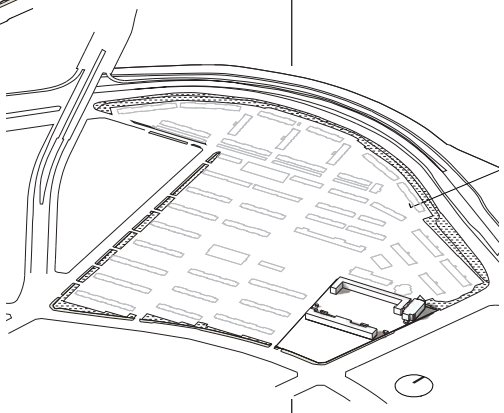

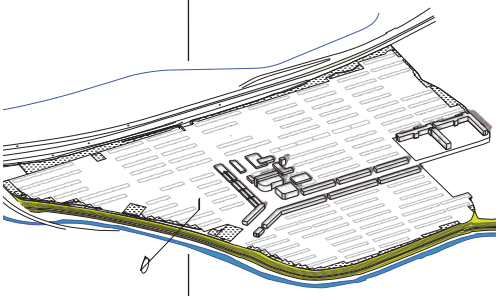

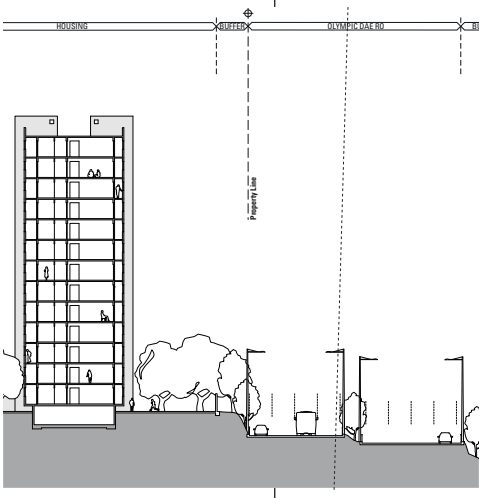

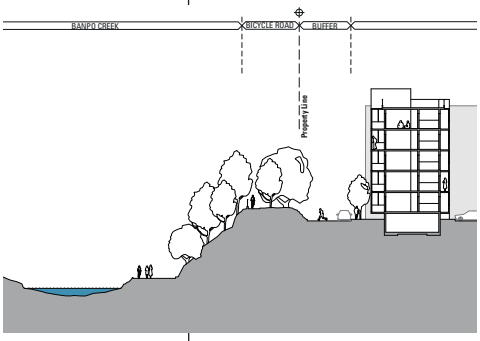

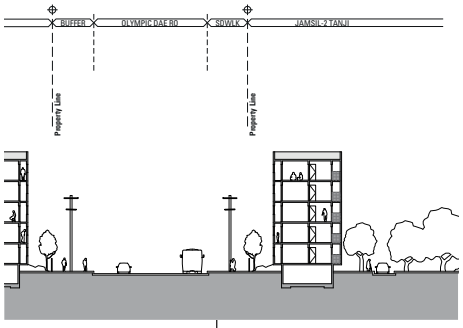

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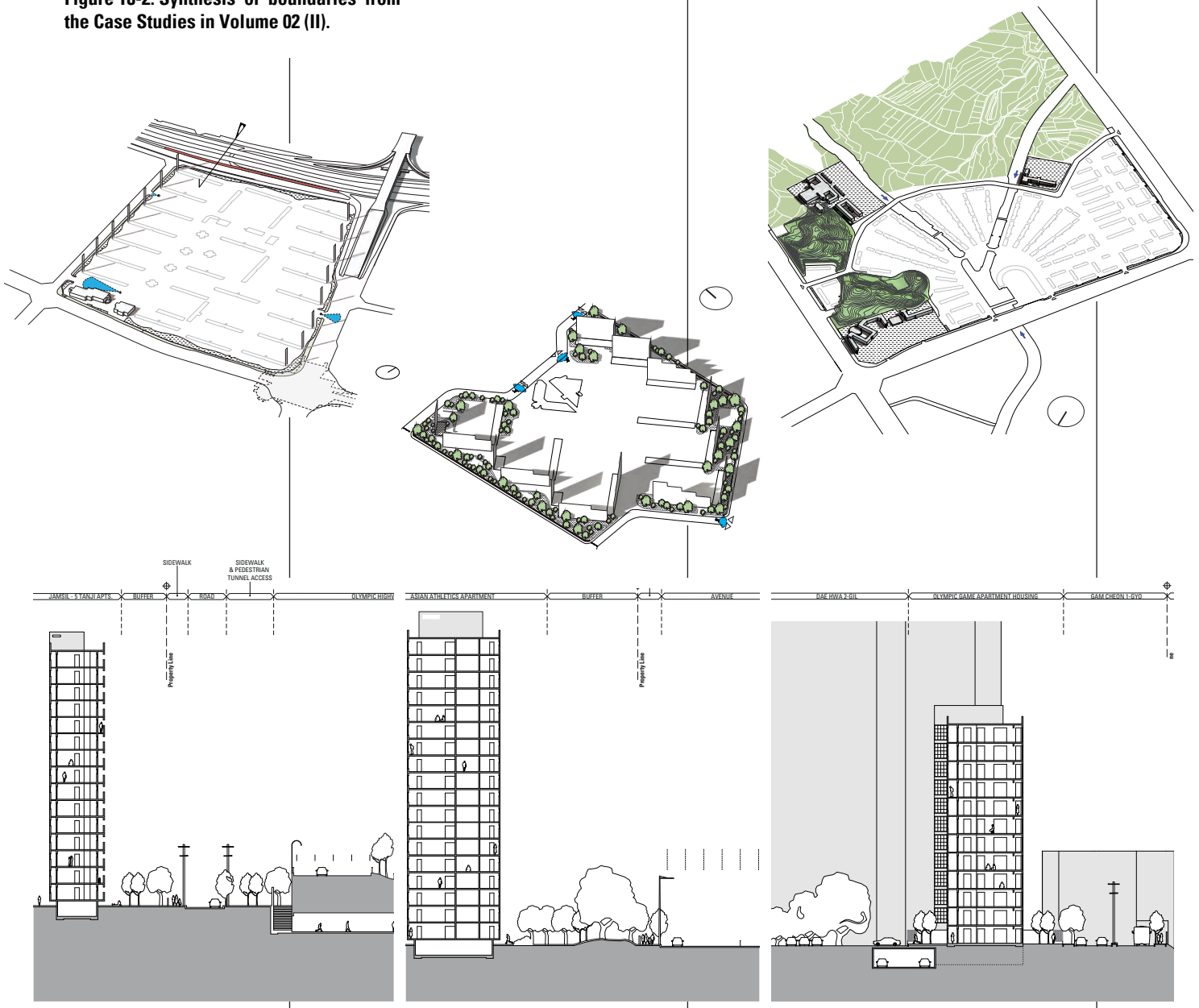
Figure 18-2. Synthesis of boundaries from the Case Studies in Volume 02 (II).



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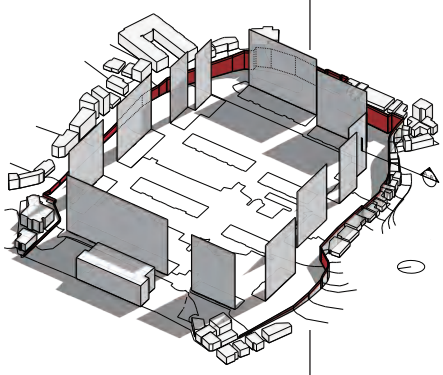

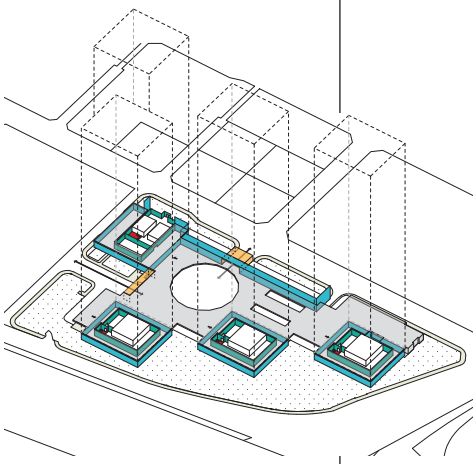

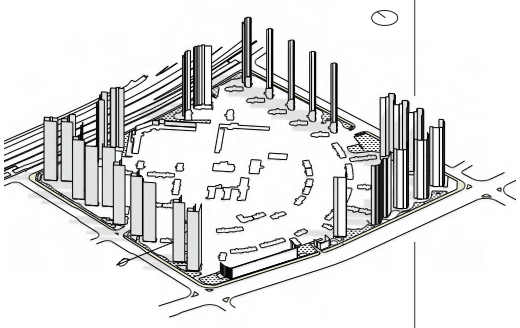

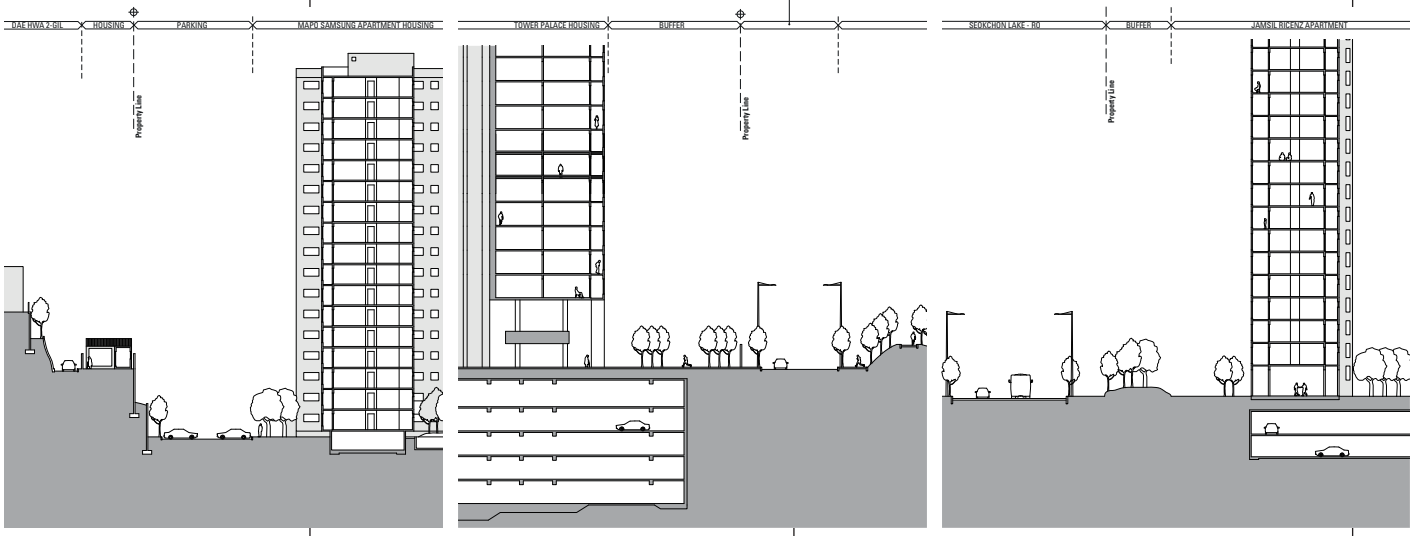

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CHAPTER 19
APAT'U TANJI CASE STUDIES: LAND USE DIAGRAMS

Looking at the evolution of *apat'u tanji* through the lens of land use provides a partial picture since it focuses on quantifiable data regarding ratios of areas, leaving aside how these areas are organized, the relationships between the different parts, and the quality of the spaces created. It nevertheless offers a synthetic approach complementary to the range of lenses employed in the previous chapters. The conclusions below assemble the different categories of land uses in three main groups: built footprint; open space; and circulations and parking.

19.1 BUILT FOOTPRINT

The built footprint takes the evolution of three variables –residential footprint, floor area ratio (FAR), and building heights- to trace the changes in building typology in a constant pursuit of a better organization of the built form, with a dual purpose: to increase residential density and to improve the living conditions of residents. This double goal would sometimes prove to be contradictory.

The evolution of the built footprint, in turn, had a direct impact on open space; circulations; and parking, demonstrating the tight correlation needed among the different aspects involved in site planning. The critical moments in the evolution of land use figures signal watershed moments in the development of the mass housing residential building types, as described below:

The Mapo Apartments of 1962 featured quite a high residential density -137 units/Ha-, in spite of a low residential footprint and FAR. This was due to the extremely small size of the units – only 29, 39, 49 and 53m^2 units were offered, targeted to the middle class of the moment. In contrast, the Hangang Mansion Apartments of 1970 barely reached half of that density -79 units/Ha-, in spite of boasting a much higher FAR and occupying a larger footprint. This was due to the comfortable sizes of the units offered, ranging between 88 and 180m^2, at least double from those of Mapo in average. This was due to the different social spectrum they were targeted to -the upper-middle class and government officials-, in a trickle-down strategy implemented by the administration to popularize mass housing among the population. With some variations related mostly to the different sizes of units (in connection to the target residents), Banpo Apartments and Jamsil-2 tanji are representative also of this type.

The considerable bump in FAR in the Yeoeuido Sibum Apartments of 1970 –double than that of Mapo and 50% more from Hangang Mansion- was due to the jump from 5 storey buildings to 12, thanks to the introduction of a higher building type with the use of a shared elevator. This not only allowed to double residential density from that of the Hangang Mansion Apartments (back to the numbers from Mapo but with unit sizes ranging between 60 and 156m^2), but also introduced shared corridors on the northern side of the units, a feature that would facilitate communication among neighbors. The Apkujeong Apartments also exemplify this phase. The increased building height prompted the introduction of new structural types based on load-bearing walls favoring interior layouts composed of rectangular cells, with long-lasting impact on the internal organization of the units.

Interestingly enough, the departure from a site planning based on parallel rows of linear housing blocks (*zeilenbau*) towards experimentations with arrangements of clusters of residential buildings initiated by the Asian Athletics Apartments and the Olympic Games Village Apartments in the middle of the 1980s did not have a noticeable impact on residential density, reflecting the limitations of quantitative analysis of built form mentioned earlier. In both cases, the articulation of different heights within the clusters in order to respond to site conditions and the pedestrian passages carved out of the first floors in the Asian Athletics Apartments indicate the prioritization of spatial aspects over purely efficiency concerns. What the statistics do register is a significant increase in all the numbers since the late 1980s with the generalization of a new type of urban renewal policy: the *jae-gun-chuk* (private residential renewal process), geared towards the replacement of old low-rise apartment complexes with high rise apartments[1]. This policy coincided with the transition to private development and with increases in residential density in order to address the chronic housing shortage while at the same time benefiting economically landowners and construction companies. Nevertheless, no specific design solutions were implemented to cope with such increases, and spatial strategies developed during the preceding decade were directly borrowed, simplified and maximized, abandoning their original community-building foundations.

The Tower Palace Apartments epitomize the liberalization of mass housing after the 1997 Asian financial crisis. The mixed-use high-rise condominium took experimentation in residential density to new levels: residential footprint was twice as much as the average until then; FAR was four times that of the Mapo Apartments -the highest in the development of mass housing in Seoul up until then-; and with its sixty-six floors it almost tripled the highest towers in the Olympic Games Village Apartments. The Jamsil Ricenz Apartments of 2008 signify a return to the median evolution of residential figures described by the evolution of mass housing in Seoul. The increase in height allowed for a smaller residential footprint while increasing the FAR up to twice as much as that from the Asian Athletics Village and the Olympic Village. Nevertheless, in spite of the higher FAR, residential density was kept smaller than in the renovated Mapo Apartments due to the larger size of the units.

19.2 OPEN SPACE

The evolution in the treatment of open space throughout the case studies demonstrates a progressive specialization of spaces and a stronger articulation with the rest of site planning strategies. Only three types of open space have been reflected in the statistics: street buffers, building buffers and parks. This simplification has been necessary in order to facilitate comparisons among the cases and does not reflect the variety, the scales and sophistication of open space in all of them. Chapters 13 and 14 in Volume 01 have covered that.

The transition from a *zeilenbau* layout to organizations based on clusters was a milestone in that evolution, since it allowed differentiating several scales and introduced a central open space as a reference for community building. These advancements would later be lost with the shift to private development.

While one of the main features the Mapo Apartments from 1961 was the large expanse of open spaces provided, they offered no differentiation. A similar-looking space was used as a park, as a playground and as a privacy buffer around the buildings. *Apat'u tanji* organized in *zeilenbau* layouts –such as Hangang Mansion, Yeoeuido Sibum, Banpo, Apkujeong and Jamsil-5 tanji- contained a large amount of open spaces as well, but most of it were underutilized, low quality sleeves of buffer space between buildings. Except in the central pedestrian cores of Yeoeuido and Jamsil-5 tanji, areas with specific park functions were only vacant building sites or buffer spaces within the residential grid, without a proper integration with the rest of the complex. Nevertheless, mini-

1 See '8. Mass Housing as a Tool for Inner City Renewal', in sunchapter '7.2 Roles of Mass Housing in the Different Plans for Seoul', Chapter 7, Volume 01.

mal areas dedicated to sports and playgrounds started to appear, catering to the leisure needs of the middle class within an emerging apartment lifestyle.

The community courtyards of the Jamsil-2 tanji stood as an anomaly within that trend, foreshadowing the later transition to layouts based on smaller communities within the complexes through the definition of clusters. These were fully adopted in two public projects from the mid-1980s: the Asian Athletics Village Apartments and the Olympic Games Village Apartments. In spite of featuring a similar residential footprint as in previous cases, the amount of dedicated park areas escalated, while buffer spaces were reduced noticeably. Clustering strategies also allowed the staging of different scales of open space, the larger ones connecting to the surrounding neighborhood and the smallest ones functioning as the cores of the distinct communities within the complex. A common central space in both complexes was designed as a symbolic central space where ceremonies related to the sports events hosted would take place.

The renovated Mapo Apartments from 1993, in spite of adopting similar site planning strategies based on clusters, reversed the trend towards the sophistication of open spaces by greatly reducing and simplifying them. Conversely, and in spite of the much higher building footprint, the Tower Palace Apartments boasted complex and carefully designed exterior spaces as one of the important features of the luxury high-rise condominium type. The last step in the evolution of open space was the removal of all parking lots to basement levels and thus the freeing of a large portion of the ground floor. This allowed for the development of elaborated features including sophisticated landscapes, water amenities, gazebos, and fitness and playground equipment. Nevertheless, a large portion of this newly found open space was dedicated to inaccessible buffer areas around the buildings or in the perimeter of the *tanji*; the layout lacked a well-defined structure, challenging wayfinding; and there was no intention to relate to larger networks of open space as in the precedents of the Asian Athletics Village or in the Olympic Village.

19.3 CIRCULATIONS & PARKING

The development of circulation and parking strategies reflects a constant struggle to cope with the increasing pressure of the private automobile. Initial street layouts were redundant, did not separate cars from pedestrians, and did not contemplate segregated areas for parking. The transition from *zeilenbau* layouts to groupings of clusters facilitated both the separation of flows and the creation of specialized parking lots. Ultimately, increasing residential density favored the appearance of vertical strategies for the separation of flows, effectively multiplying the ground level.

Interestingly enough, when the Mapo Apartments were built in 1962, the ratio of car ownership in South Korea was so low that no provision for parking was made. Over the next decades, the redundancy of the street layout was able to accommodate the increasing demand of parking space.

Complexes featuring a *zeilenbau* layout such as Hangang Mansion, Banpo and Apkujeong also had redundant street grids, resulting in large ratios of the parcel covered in asphalt –between 30 and 40%- , to the detriment of green areas. This prevented as well the separation of vehicles and pedestrians. In contrast, the aims to reduce traffic inside the complex and to pursue pedestrian segregation in the Yeoeuido Sibum Apartments from 1970 positively reduced asphalted areas, which could be dedicated instead to a pedestrian zone at the core of the complex, anticipating future developments. The Jamsil-5 tanji built thirteen years later followed similar goals, but the internal ring road compromised the separation of flows.

Another sign of things to come was the cluster arrangement tested in Jamsil-2 tanji. While it had no significant impact on the total built area, it demonstrated that layouts improving the separation of flows, reducing vehicular streets and creating separated parking areas were possible. The full-fledged adoption of cluster layouts took place ten years later with the Asian Athletics Village Apartments and the Olympic Games Village Apartments. The first case allocated pedestrian flows on the periphery, allowing them to reach beyond the boundaries of the site all the way to the

venues of the games. The introduction of underground parking lots further enhanced the common amenities of the clusters and increased areas for pedestrians and leisure activities. The large scale of the Olympic Apartments made the complete separation of flows very difficult, and instead a compromise was reached. Streets were categorized in hierarchies, and different degrees of segregation were adopted in each situation, from shared spaces to complete separation. Parking lots were also segregated from the main streets and transformed into a shared common space for the residents of the clusters.

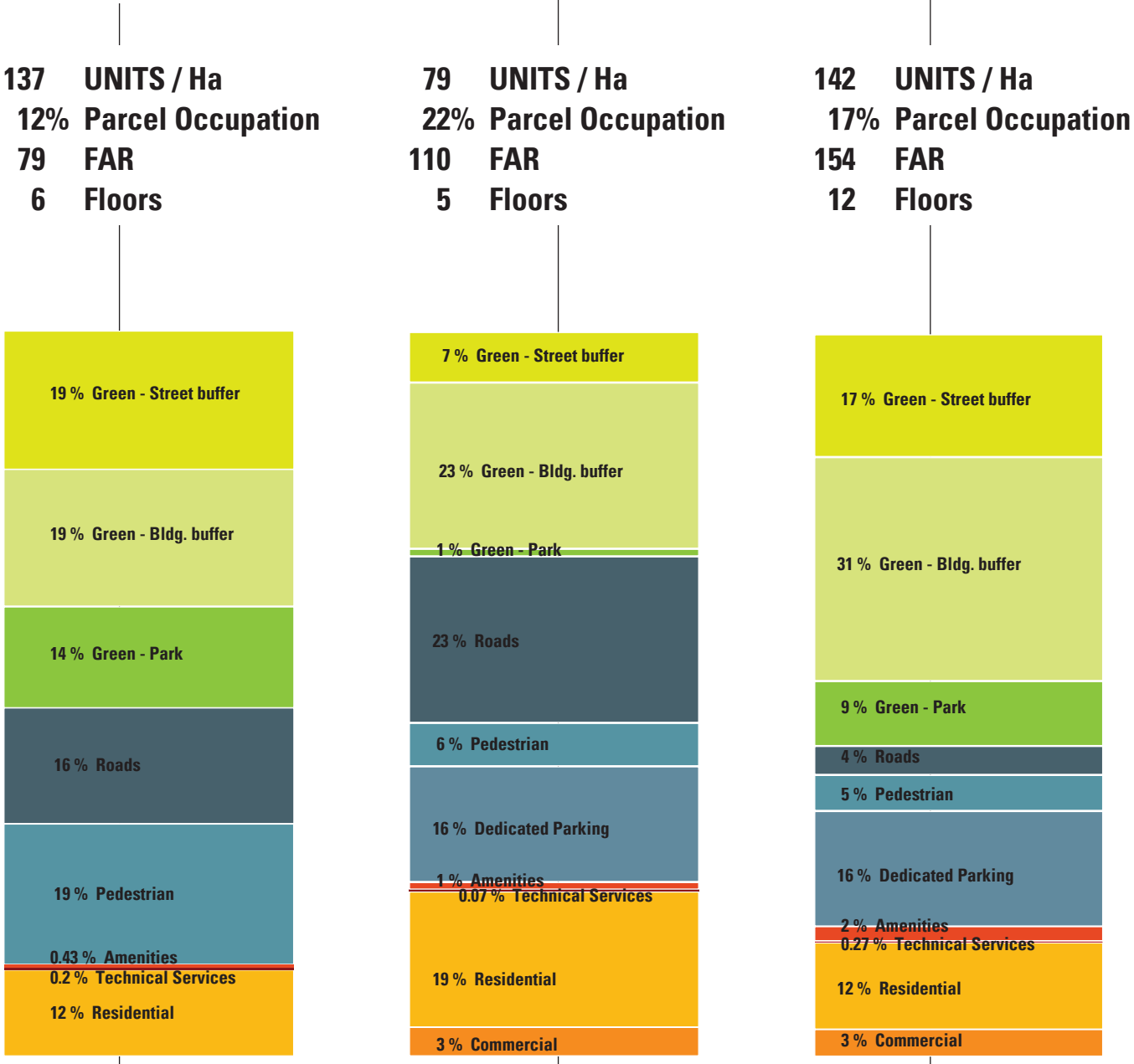
In spite of adopting similar strategies, the renovation of the Mapo Apartments overturned the aforementioned trends towards separation of flows and minimization of areas for vehicles, to the point that almost 50% of the parcel was covered in asphalt in spite of the inclusion of underground parking spaces. In order to deal with high residential density and a reduced site area, the Tower Palace Apartments set a precedent by relocating all parking needs underground. This strategy would become mainstream during the 2000s, as exemplified by the Jamsil Ricenz Apartments. In spite of the sectional segregation of flows, a large portion of the main vehicular artery of the *tanji* remained at street level, creating conflicts with pedestrians and muddying the clarity of the scheme.

1962 — 1972

1st PHASE

PROVISION OF MINIMUMS & EXPERIMENTS IN MASS HOUSING

Figure 19-1. Synthesis of land use diagrams from the Case Studies in Volume 02 (I).



01/ 1962
MAPO
APARTMENTS

02/ 1970
HANGANG MANSION
APARTMENTS

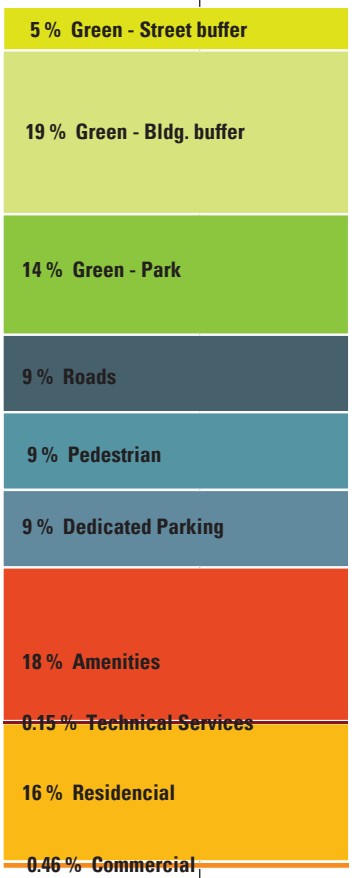
03/ 1970
YEOEUIDO SIBUM
APARTMENTS

1960 — 1965 — 1970

42 UNITS / Ha
26% Parcel Occupation
98 FAR
5 Floors

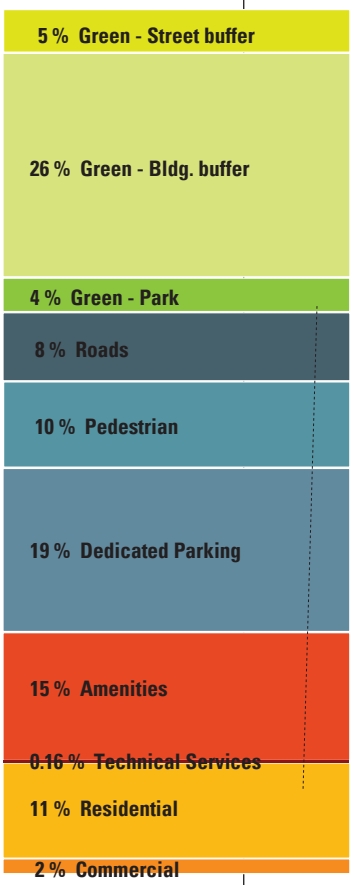
04/ 1972
BANPO
APTS

150 UNITS / Ha
35% Parcel Occupation
91 FAR
5 Floors



05/ 1975 JAMSIL
2-TANJI APTS

102 UNITS / Ha
17% Parcel Occupation
175 FAR
5-15 Floors



06/ 1975
HYUNDAI
APKUJEONG APTS

07/ 1983
JAMSIL
5-TANJI
APTS

1975 1980

1986 1990

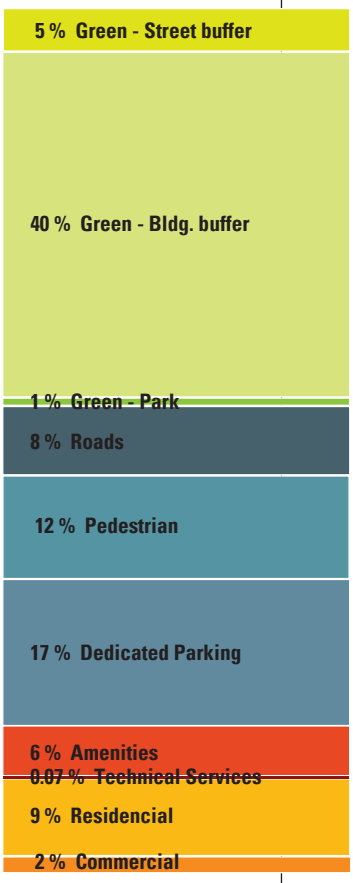
3rd PHASE

CONSOLIDATION OF MODELS

EMERGENCE OF SATELLITE CITIES &
POPULATION DECLINE IN MUNICIPAL SEOUL

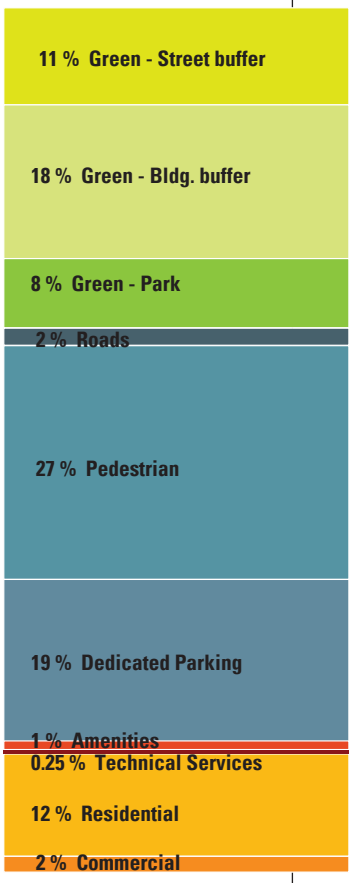
Figure 19-2. Synthesis of land use diagrams from the Case Studies in Volume 02 (II).

116 UNITS / Ha
14% Parcel Occupation
148 FAR
15 Floors



07/ 1983 JAMSIL 5

90 UNITS / Ha
14% Parcel Occupation
162 FAR
9-18 Floors



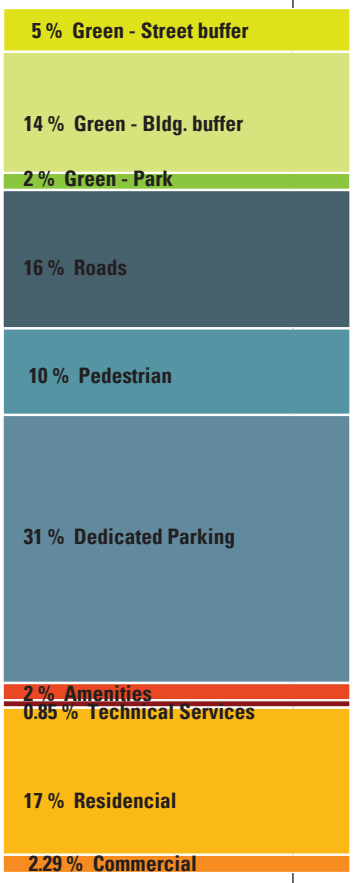
08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

84 UNITS / Ha
15% Parcel Occupation
123 FAR
6-24 Floors

09/ 1986
OLYMPIC
VILLAGE APTS

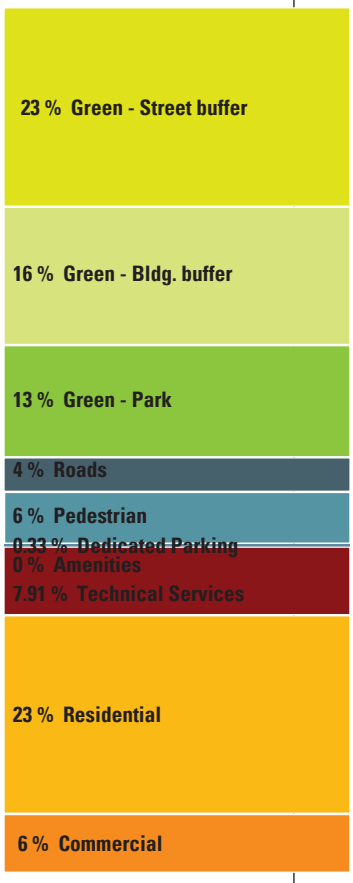
1985 1990 1995

227 UNITS / Ha
22% Parcel Occupation
310 FAR
17 Floors



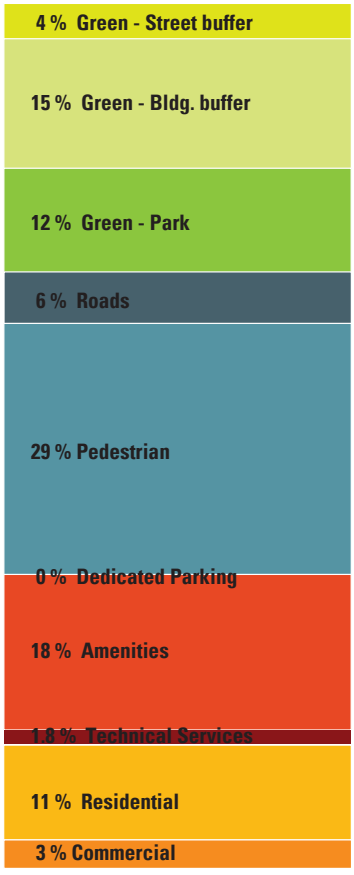
10/ 1993
MAPO
SAMSUNG APTS

479 UNITS / Ha
31%Parcel Occupation
1,300 FAR
42-66 Floors



11/ 1999
SAMSUNG TOWER
PALACE APTS

196 UNITS / Ha
19% Parcel Occupation
376 FAR
25-33 Floors



12/ 2008
JAMSIL
RICENZ APTS

CHAPTER 20
CONCLUSIONS TO SECTION 3 / THE SCALE OF THE HOUSING COMPLEX
INTERNAL ORGANIZATION OF MASS HOUSING ESTATES

20.1 INTRODUCTION

The emergence of mass housing brought a radical change in the process of urban growth, from piecemeal development to the construction of self-contained urban sectors. As explained in the introduction of Section 3 ´City Scale', the construction of the city typically depends on three separate operations –the distribution of land, the layout of infrastructure and public space, and the construction of buildings. These operations are not necessarily simultaneous nor do they always take place in the same sequence, since each one of them may have its own time frame depending on different actors, socio-historical and economic constraints, etc. With the arrival of mass housing, these three operations were unified under a single step, compressing the time dimension of city-making[1].

Section 4 has traced the evolution of *apat'u tanji* as independent urban fragments. The goal was to find out whether the development of a local expertise in mass housing over the years produced distinctive and autochthonous spatial models which have contributed as original innovations to the global field of mass housing, or they simply remained as emulations, recreations and adaptations of tried and tested solutions imported from elsewhere in a simple and direct manner.

There are three distinct periods in the evolution of the design of *apat'u tanji* in Seoul. An initial phase was characterized by the adoption of *zeilenbau* site planning, a configuration based on parallel rows of residential buildings developed in Germany during the second half of the 1920s[2]. During a second phase, designs strove to overcome the limitations of that model with alternative layouts based on arrangements of clusters of residential buildings with community-building interests. In a final stage, the transition to private development coincided with the emergence of urban renewal policies for elder apartment complexes and a push for higher density. Spatial strategies developed during the previous phase were adopted, stripped of their original social underpinnings.

In spite of a rich evolution over more than forty years, *apat'u tanji* built in Seoul during the period of study are characterized by:

- A clearly defined boundary which isolates them from their immediate surroundings.
- A preference for open block layouts, with free-standing buildings on an open site, rather than aligned along existing roads.
- A reduced built footprint, which leaves large areas of open space at ground level for parking, playgrounds, green areas, and other amenities.
- A self-contained internal structure completely independent from wider street networks and systems of open spaces.
- This self-reliance includes the provision of basic daily amenities such commercial areas and schools.

1 See the introduction to Section 2 - City Scale.

2 See 'Zeilenbau' in Urban Morphology References, Chapter 19, Volume 02.

The research has been based on the comparative analysis of case studies. The criteria for the selection of the cases was to choose *apat'u tanji* which were representative of innovations that would determine the course of the development of mass housing in the following years; which were included within the period of study comprised in the research; and which were also representative of the phases of development of *apat'u tanji* defined in Chapter 6, Volume 01. Based on that, twelve cases were selected, analyzed in Chapters 7 to 18 in Volume 02. A series of topics of comparison were identified, which characterize mass housing and could be found in most of the cases. Namely, a basic diagram of the internal organization; the presence or not of clusters; the uses and definition of open space; internal circulations and parking strategy; commercial facilities; building types and interior unit layouts; boundary strategies; appropriations by users; and land use diagrams and statistics.

The comparative analysis of each topic and the ensuing conclusions are covered in the preceding Chapters 10 to 19, while this final chapter synthesizes the relevant findings of the Section. The comparative analysis of two of the topics –evolution of unit layouts and appropriations by users- were not included in this section but in Section 4 'The Unit Scale', since they match better the purposes of that section.

The rest of the chapter discusses the three main periods in the evolution of the design of *apat'u tanji* in Seoul based on the design models employed, in relationship to the international diffusion of planning and architectural concepts and methods.

20.2 MAIN PERIODS IN THE DESIGN OF MASS HOUSING ESTATES IN SEOUL

The evolution of the design of *apat'u tanji* exemplifies different types of the international diffusion of twentieth century planning and architectural models through processes of borrowing, adaptation and hybridization. Following the typology of this diffusion developed by planning historian Stephen Ward already mentioned in Section 02 - City Scale[3], different types of diffusion over time have been:

A. Undiluted & Selective Borrowing – zeilenbau site planning

The initial stage of the introduction of modern mass housing models to South Korea corresponds to a combination of the stages Ward has defined as 'undiluted borrowing' and 'selective borrowing'.

Undiluted borrowing: external ideas and practices have been received without conscious selectivity, usually as substantial packages of planning practice rather than individual innovations or ideas. This borrowing has usually taken place in a rather uncritical way and frequently with a limited awareness of the full range of alternative planning models available. It reflects a high reliance on foreign planners to support leadership, and deference to ideas arising in those countries from which the borrowing occurs.

Selective borrowing: according to Ward, refers to a non-innovatory borrowing process where planners from the receiving country have emulated specific aspects of a planning practice from abroad in a simple and direct manner, with a limited engagement with the theoretical bases of the borrowed model. This has limited the possibilities of deconstructing those models and reassembling them together with others. At the same time, there may have been some degree of selection – parts of the model may be discarded or modified if they do not seem appropriate (Ward, 2000, p. 47).

The adoption of the *zeilenbau* (row construction) model as the typical site planning strategy for mass housing estates in Seoul during the 1960s, 1970s and up to the mid-1980, borrowed from models developed and perfected in Germany during the 1920s[4], shows characteristics of both processes. This planning concept was based on nineteenth century concerns to prevent the spread of epidemics in the crammed slums where workers in industrialized countries lived. These hygienic concerns favored the design of open urban blocks with parallel residential buildings which facilitated sun exposure and natural ventilation (see Figure 20-1 on page 279). The concept was adopted by the planners addressing the lack of housing for the urban poor in the Weimar republic at the beginning of the twentieth century, where the regular layout was also seen as equalitarian. It also favored the rationalization and standardization of construction methods, and thus cost reduction. Many of the *siedlungen* (housing development estates) built in Germany during the 1920s followed the layout. The model was consolidated by Ernst May and the Frankfurt city officials during the Neues Frankfurt[5] program between 1925 and 1930. Through a streamlined construction process, the comprehensive concept not only managed to address the looming housing shortage within a short period of time, but it also broke with residential building tradition; set up standards for urban development and design; and established modern residential lifestyles.

Over time, the *zeilenbau* planning concept became a standardized comprehensive housing method, as it encompassed not only matters of site planning but also the optimization of residential building types and the rationalization of the interior layouts of the units and even the arrangement of kitchens. *Zeilenbau* plans became inextricably tied with the five-storey walk-up linear block

3 See '9.1 Contribution of the Evolution of Mass Housing in South Korea to the Diffusion of Modern Urban Concepts' in Chapter 9, Volume 01.

4 See 'Zeilenbau' in Urban Morphology References, Chapter 19, Volume 02.

5 Affordable public housing program developed in Frankfurt during the second half of the 1920s, initiated by Mayor Ludwig Landman. He hired Ernst May as a general manager, who assembled a team of architects, with renowned figures such as Walter Gropius, Adolf Meyer, Bruno Taut, Mart Stam and Margarete Schütte-Lihotzky, among others. About 15,000 units were built in the period, the most comprehensive residential program of the Weimar Republic.

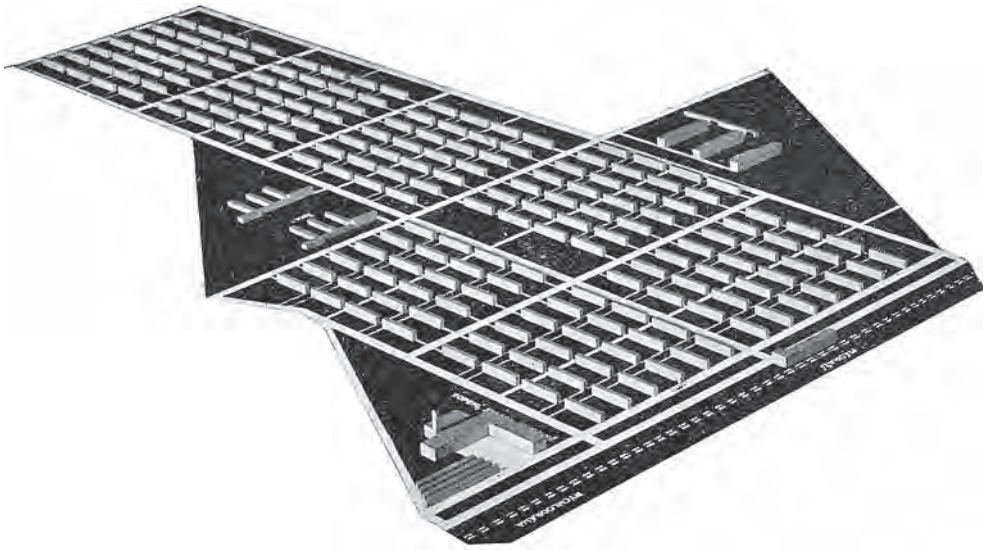


Figure 20-1. Proposal for a small apartment district in Prague featuring a zeilenbau site planning model. Jan Gillar, 1932.
Source: Teige, K. (2002). *The Minimum Dwelling* (original publication, 1932).

Figure 20-2. Newspaper advertisement of the Banpo Apartments by the Korea Housing Corporation featuring a zeilenbau site planning model
Source: 경향신문 (*Gyeonghyang newspaper*), November 7th, 1972.

residential typology with two units per floor, due to its simplified construction system, its adaptability to the configuration of linear blocks, and its capacity to match the widest spectrum of generic socio-economic profiles. In turn, according to a combination of reformist and sanitary concerns, functions inside the home would be separated. Eating and sleeping were to take place in different spaces, and children and adults would be separated in order to increase privacy. Since orientations were fixed according to the zeilenbau rational plan, the layout of the units was quickly standardized: common daily activities would take place on the western side, while sleeping quarters would face the east. This was known as the *existenzminimum* (minimum dwellings), with the original intention to provide the maximum livability with a minimum of hygienic standards for the working classes[6]. The rationalization of domestic interiors, together with technical and scientific advancements after World War I allowed for the specialization of the bathroom and the kitchen, which became standardized by Margarete Schütte-Lihotzky in the 'Frankfurt Kitchen'. The integration of these four elements: *zeilenbau* site planning; five-storey walk-up residential blocks; *existenzminimum* unit layouts; and a standardized built-in kitchen became a comprehensive mass housing technology which shaped urban form and private domestic lifestyles, setting up the path for the development of modern collective housing as a universal urban form.

This model was exported to Japan by German advisors, and from there it travelled to Korea with the colonial efforts. The model underwent several adaptations to the local residential culture: building blocks were turned ninety degrees in order to orient them east-west so the main façade would face south; they were surrounded by a fence; and they were adapted to the growing private automobile ownership which developed in parallel to mass housing and to an emerging consumerist culture. The introduction of cars greatly conditioned the use of the ground floor. Another important adaptation was their target audience: while the original *zeilenbau* layouts were developed as part of social housing programs for industrial workers, in Seoul they were targeted to a wider social spectrum. Thus, unit sizes ranged from minimum housing (as in the case of the Banpo Apartments - see Figure 20-2 on page 279), to apartments for the upper middle class (Jamsil-5 tanji, Yeoeuido Sibum), and to luxury apartments (as in the case of the Hangang Mansion and Apkujeong).

Some adaptations heralded future transformations which would evolve the model into something entirely different, such as the clusters of Jamsil-2 tanji – obtained by turning some of the bars ninety degrees in order to form square courtyards – or in the separation of pedestrians from vehicles in the Yeoeuido Sibum Apartments. But the main transformations were driven by the need to increase residential density – thus by enlarging building types. The efficiency of low, medium and high-rise residential blocks was a well-researched topic since the end of the 1920s, with contributions from renowned architects such as Richard Neutra, Walter Gropius and Le Corbusier during the Congrès Internationaux d'Architecture Moderne (CIAM) III in Brussels in 1930. The increase in height brought important innovations in the system of access to the units, as elevators were introduced. This prompted the appearance of shared corridors on the northern façade of the building, with a consequent impact on the privacy of the rooms on that side. The Yeoeuido Sibum Apartments of 1970 set up the precedent for this new building type, and the Apkujeong and Jamsil-5 tanji followed the trend. The increase in height also required the introduction of sturdier structural systems, and thus post-and-beam reinforced concrete systems were replaced by load bearing walls. In turn, they would also impact interior layouts of the units, since they would favor arrangements of closed structural cells in plan.

The adoption of the *zeilenbau* model during the early implementation of mass housing in Seoul features characteristics of the 'undiluted borrowing' type of diffusion of modern planning concepts in the fact that they constituted in themselves packages of planning practice which included site

6 See 'Existenzminimum' under Building Type References, Chapter 19, Volume 02.

planning, building types and unit layouts, rather than individual innovations. Their hegemonic implementation for more than twenty years also reflects a limited awareness of other alternatives available. At the same time, their adaptation to local cultural specificities corresponds to the 'selective borrowing' type of diffusion.

While all those adaptations did not change the essence of the *zeilenbau* layout, they helped build up the bases of a local design culture of mass housing. The model showed signs of exhaustion with the Apkujeong Apartments and the Jamsil-5 tanji Apartments, due to:

- The need for more residential density.
- The increasing amount of unused buffer space between the linear blocks. With the increase in the height of the blocks, these buffers also got wider and became an important portion of the total site area.
- The gigantism of the last residential slabs – up to 110 meter long and fifteen stories tall in the case of the Jamsil-5 tanji- produced a uniform and monotonous residential environment.
- The increasing demand for parking space.
- The separate logics of the distribution of building mass; circulations; landscape; and definition of the perimeter did not work together to convey a coherent spatial layout.
- Lack of characterization of open space. *Zeilenbau* layouts were based on the rational distribution of residential slabs, and open space was a little more than the leftover space between the buildings.
- The evolution of residential lifestyles.

These symptoms called for more sophisticated site planning strategies and building types which were not possible to attain just by adapting the *zeilenbau* – residential slab combination any more. A change of paradigm was needed.

B. Synthetic borrowing: planning mass housing through clusters

Synthetic borrowing refers to a borrowing process where external models have been filtered through developed indigenous reformist movements and professional expertise. Original models have been deconstructed and reintegrated with local planning ideas and practices, producing something distinctive which may constitute an innovation for other countries to borrow (Ward, 2000, p. 46). The transition from the *zeilenbau* site planning paradigm to models based on clusters during the mid-1980s exemplifies this type diffusion of planning concepts.

New, hybrid spatial models adapted to local needs appeared under the patronage of the public housing authority through international design competitions. The Asian Athletics Village Apartments and the Olympic Village Apartments are representative of this phase.

The introduction of clusters implied an important change of paradigm. While *zeilenbau* layouts were based on scientific, hygienic and Fordist approaches to the design of residential environments –and thus produced 'solutions' which could be generalized; planning mass housing estates from the point of view of clusters represented a concern for the relationship between built forms and the communities they sustained, and thus towards a community-building agenda.

The search for alternatives to the *zeilenbau* system in Seoul during the 1980s stemmed from an increasing awareness about the definition of smaller social groups within residential complexes. The term 'cluster' was introduced to the architectural discourse at CIAM 10 in Dubrovnik in 1956 (Smithson, 2005, p. 30). The topic of the congress was 'habitat', and the Team 10, who had been in charge of the preparations, framed the event along the lines of the Statement on Habitat of 1954. The statement criticized the Charte d'Athènes for its simplification in addressing the complexity of the city only from an analytical and functional point of view. While housing groups built according to the Charte *'had high standards of construction and met the needs*

of society as outlined by official sociologists', urbanism based on the Charte tended to produce communities *'in which the vital human associations are inadequately expressed'* (Smithson, 2005, p. 24). Thus, the Statement advocated for complementing the functionalism of the Charte d'Athènes with a wider focus on cultural, historical, geographical and ecological issues[7].

Through field research shown at the congress, the members of the Team 10 realized that traditional communities were built from a hierarchy of levels of association –the house, the street, the district and the city. These were not only physical frameworks organizing the city and providing access, but also and more importantly, *'an arena for social expression'* (Smithson, 2005, p. 24). Changing lifestyles after World War II and specifically the invasion of those public arenas by the private automobile resulted in the disappearance of the social realities they had supported. The Statement on Habitat claimed the re-identification of man with his environment by proposing new relationships between communities and the built forms which sustained them. Since traditional spatial configurations based on the house, the street, the district and the city were deemed obsolete by the automobile, the term 'cluster' was proposed as a contemporary equivalent capable of encapsulating the social connotations traditional levels of association had had.

Like the related concepts of 'habitat' and 'scales of association', 'cluster' remained an elusive idea. Considering the scales of human association as the first principle for urbanism required being specific to the wide range of conditions of a particular locale, thus foregoing universalizing formulas. Its inspirational power lied in the recognition that the urban forms which had shaped social arenas until then were obsolete and new ones needed to be proposed, catering to the conditions of the modern city without falling into simplifications or generalizations. Alison and Peter Smithson illustrated the use of clusters through a series of residential projects throughout the first half of the 1950s.

The idea of clusters related to scales of human association in the planning of residential districts would become tightly associated with the concept of the neighborhood unit, which influenced the design of the second generation of new towns in the UK during the second half of the 1950s. By the beginning of the 1960s, the planners of the British new towns had already abandoned the neighborhood unit model altogether, due to their perceived failure in creating socially balanced communities (Homer, 2000, p. 71), but by then they had been widely adopted elsewhere. In particular, the adoption of neighborhood units within a wider hierarchy of scales including formations of clusters in the planning of Senri New Town near Osaka since 1962 established them as precedents for the planning of Japanese new towns from then on[8].

The development of mass housing by the Japan Housing Authority had a strong impact on the design of mass housing estates, new towns and satellite cities in South Korea. The Asian Athletic Games Village Apartments of 1986 and the Olympic Games Village Apartments of 1988 represent a critical turning point in the evolution of *apat'u tanji* in Seoul. They were the result of a combination of unique conditions, as they were developed to host the athletes and journalist for two extremely representative sports events which symbolized the coming of age of the country among the world's developed countries. Even though they were promoted by the public Korea Housing Corporation, the designs were the result of international competitions and thus they are two of the few *apat'u tanji* in Seoul with a clear authorship and a strong sense of leadership throughout the development process. The two complexes demonstrated original site planning methods based on the careful arrangement of clusters as small communities within the larger estate (see Figure 20-3 to Figure 20-6 on page 285). This main strategy was reinforced by complementary strategies such as the provision of open spaces at different scales; the relationship with the urban context; the establishment of different hierarchies

7 See subchapter '21.2 Habitat as a Dialectic Complement to the Functional City' in Chapter 21, Volume 01.

8 See '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 01.

of circulations; the location of commercial facilities; and the location of parking lots, in order to assemble cohesive urban entities which operated at different scales and were more than just the sum of their individual parts.

CHARACTERISTICS

The main characteristics of these complexes were:

1. **Creation of distinct scales within the complex.** Following the discussions on the topic of habitat in the design of residential environments after World War II, the crafting of a hierarchy of levels of association within the complex was pursued. Both estates included a vision reaching beyond the confines of their parcels by establishing pedestrian connections to the surrounding neighborhood. These connections would become one of the main internal articulations of the complexes, by determining the location of the main open spaces and a hierarchy of circulations. Finally, smaller clusters embedded within this overall scheme would have their own identifying community spaces.
2. **Spatial structure.** In its scientific pursuit of equality of light and air conditions, the nature of the *zeilenbau* layout favored modular repetition and discouraged spatial hierarchies. This greatly challenged wayfinding; the location of open spaces -which had to be 'excavated' from the modular built mass-; and in many cases defaulted into a redundant vehicular network. The presence of a central space in both designs, related to the symbolic and celebratory character of the international events they hosted, conferred a cohesive character to the plans and provided a clear spatial structure with landmarks and distinct wayfinding strategies. The radial layout of the Olympic Apartments, for instance, created a tension between center and periphery by increasing the height of the buildings and the width of the common yard, which was meant to dynamize space.
3. **Definition of clusters.** The interest on built forms as arenas for social expression obeyed a community-building agenda. Clusters were planned as self-autonomous residential entities in terms of diversity of residents and unit sizes, vehicular access, parking, garbage disposal and surveillance. This autonomy was reflected in their distinct formal appearance: the built mass was inextricably bound to a community open space at its core, which functioned as an open-air vestibule and concentrated access, circulations, parking facilities, and landscape features such as benches, planters, fountains and playgrounds. For instance, communal areas in the Asian Athletics Games Village Apartments were designed to encourage random encounters among residents, to the point of embracing the 'intended discomfort' of exposing residents to the outdoors on their way to the parking (Post Seoul, 2017).
4. **Composition of cohesive façades.** The understanding of the *tanji* as a cohesive whole rather than an endless repetition of exact modules favored the holistic composition of their facades. In both cases, clusters were understood as three-dimensional entities where the modulation of the heights of buildings in relationship to the width of the common space was meant to strengthen the identity of cluster.
5. **References to traditional residential features.** The arrangement of clusters reinterpreted spatial qualities of the traditional residential quarters of Seoul. The introverted inner courtyards and the stepping profile of the aggregations of residential buildings referenced the reserved living quarters perched on the hills surrounding the old downtown and the mountainous landscape background of the city. The floor plans of the Asian Athletics Games Village Apartments were designed to accommodate important family rituals which typically took place at home, such as funerals and weddings (Post Seoul, 2017).
6. **Diversity and articulation of open space.** In spite of some notable experiments, open space had a difficult fit in *zeilenbau* layouts. With the introduction of clusters, open spaces

increased due to the reduction of parking areas with to the provision of underground facilities; the optimization of circulations; and the reduction of underused buffer zones. Clusters brought the identification of residential mass with the related communal area, thus making buildings and void an inseparable unit. In conjunction with the arrangement of different scales within the complex, a variety of outdoor experiences could be offered. The communal areas at the core of the clusters became the linchpin of a wide variety of outdoor experiences articulating a sophisticated sequence which in the case of the Olympic Village Apartments encompassed from the private yards in the first floor units all the way to the Han River Park and the Greenbelt through the green corridors along the existing streams.

7. **Hierarchy of circulations.** The evolution of internal circulations reflects the increasing pressure of automobile ownership on residential environments, and had been the reason for the adoption of three crucial concepts in the development of cluster layouts in Seoul: Perry's neighborhood unit[9]; the separation of traffic modes as formulated by Stein, Wright and Sewell in Radburn[10]; and the development of clusters and scales of association by the Team X[11]. Instead of pursuing an impossible complete segregation of traffic modes, both the Asian Athletics Apartments and the Olympic Village Apartments achieved a sensible compromise by limiting the contact between vehicles and pedestrians according to a hierarchy of streets, reflecting a more sophisticated understanding of mobility. Main roads accessing the *tanji* from the outside would have sidewalks for pedestrians, but from there they would be encouraged to take pedestrian lanes threading the different clusters together through the landscape, segregated from the distribution roads used by cars. Both systems may overlap at particular intersections, and parking lots functioned as cul-de-sac for the vehicular system. In order to modulate an urban experience catered to the human scale, the Olympic Village Apartments went as far as to propose that the radial streets of the estate would be aligned to the long facades of the clusters, like in a traditional urban block arrangement rather than in an open block layout. Addresses in the complex depended on street names rather than on anonymous building numbers, as it was and still is customary in *apat'u tanji* in Seoul.

8. **Separated areas for parking.** Parking lots were arranged in specific areas separated from the street network in order not to block traffic. In so doing, they became integral to the clustering system. Instead of being treated as a hidden facility, they were consolidated with the cluster's communal areas, and were used as yet another opportunity for community building. Also, for the first time underground levels were introduced. The underground parking level in the Olympic Village Apartments was raised in such a way to provide privacy from the street to the first floor units, thus reducing the need for landscape buffers.

9. **A residential building type fit for the clusters: from horizontal slabs to vertical modules sharing a core.** Residential buildings completely lost the shared corridors present in the last iterations of the *zeilenbau* layout, and vertical modules of two units per floor sharing a core with an elevator became the norm. The aggregation of these modules formed the clusters. All units within a module were identical due to the use of load-bearing walls, so diversity of unit sizes within a cluster was achieved by grouping modules of different sizes and layouts. The use of load-bearing walls had a decisive impact on the internal layout of the units, since structural walls favored plans composed of rigorous arrangements of rectangular cells, greatly limiting the flexibility of the units.

9 See '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 01.
10 See 'Radburn' under Urban Morphology References, Chapter 19, Volume 02.
11 See subchapter '21.2 Habitat as a Dialectic Complement to the Functional City' in Chapter 21, Volume 01.

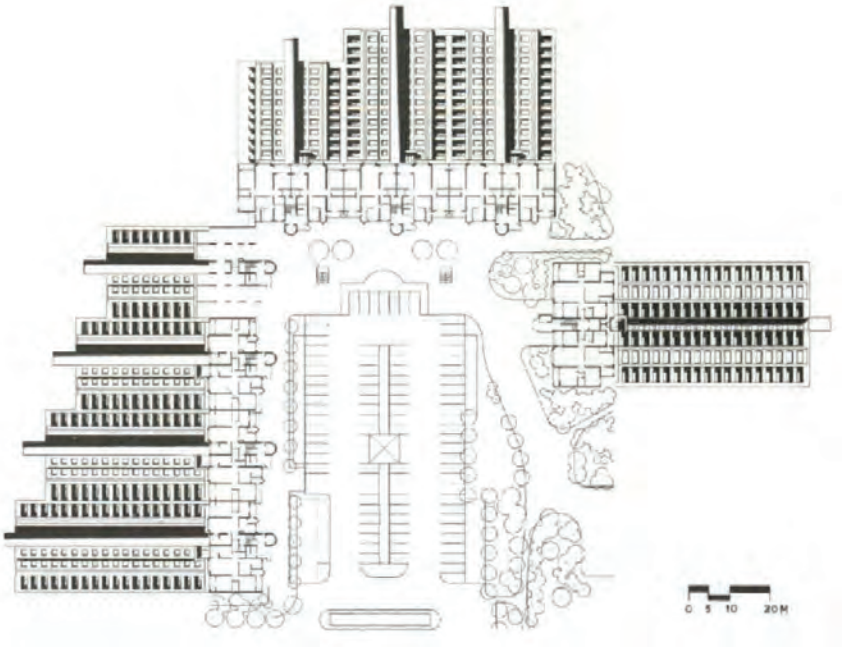


Figure 20-3. Design of a typical residential cluster in the Asian Athletics Village Apartments.
Source: Architecture & Urban Research Information Center (AURIC), http://www.auric.or.kr

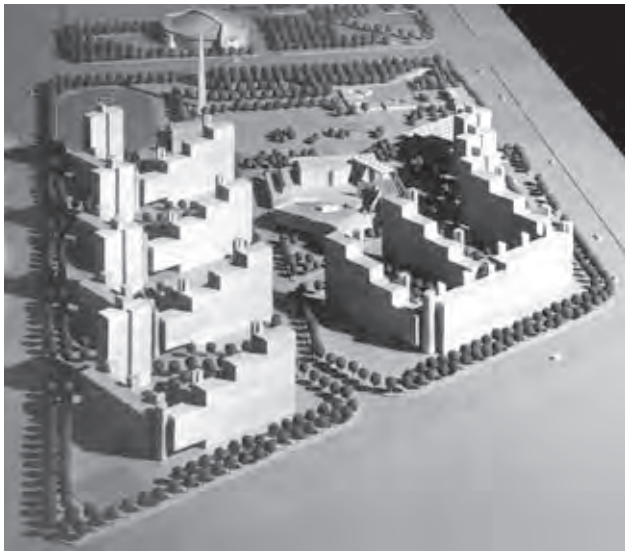


Figure 20-4. Model of the proposal for the Asian Athletics Village Apartments design competition by architect Joh Sung-yong, showcasing the layout of the clusters.
Source: Architecture & Urban Research Information Center (AURIC), http://www.auric.or.kr

Figure 20-5. Model of the Olympic Villge Apartments showcasing the layout of the clusters.
Courtesy of Kyu Sung Woo Architects.

Figure 20-6. Section of a typical cluster in the Olympic Villge Apartments.
Courtesy of Kyu Sung Woo Architects.

FURTHER CONSIDERATIONS

The development of *apat'u tanji* based on the introduction of clusters with the Asian Athletic Games Village Apartments and the Olympic Games Village Apartments stands as a watershed moment in the development of high-density mass housing estates in Seoul, and they constitute the most recognizable and original contribution to the international diffusion of mass housing at the scale of the apartment complex.

Some final considerations about the planning of mass housing estates based on cluster are:

- **Planning with clusters implies a cohesive system which involves all site planning strategies.** Through the analysis of the two case studies, one critical issue stands out: in spite of the improvements in the separate areas of overall spatial structure; articulation of different scales; uses and definition of open space; circulations; and approach to parking, the main innovation introduced was the integration of all these strategies into a cohesive site planning operating at different scales.
- **No fixed spatial formulas.** In spite of their commonalities, the radically different design approaches adopted in the two case studies discussed challenges the establishment of fixed spatial solutions, in opposition to the zeilenbau model. This difficulty harks back to the original adoption of the scales of human association as the main principle for urbanism, which required considering the expanded cultural, historical, geographical and ecological context of a particular place and thus went against the adoption of globalizing design solutions[12].
- **Quantity versus quality.** The shift from *zeilenbau* layouts to aggregations of clusters not only reflects a quest for optimizing the design of mass housing estates in order to achieve higher residential density from a purely quantitative point of view. In fact, the adoption of cluster organizations in the Asian Athletic Games Village Apartments (90 units/Ha and 162 FAR) and the Olympic Games Village Apartments (84 units/Ha and 123 FAR) does not show any noticeable increase on residential density and floor area ratio (FAR) from earlier cases featuring a *zeilenbau* layout, such as the Apkujeong Apartments (102 units/Ha and 175 FAR) and the Jamsil-5 tanji (116 units/Ha and 148 FAR). The stepping profile of the residential blocks in response to site conditions but also as a concession to the human scale and as a formal identity of the clusters; and the pedestrian passages carved out of the first floors in the Asian Athletics Apartments indicate the prioritization of spatial, compositional and community-building aspects over pure efficiency concerns.
- **The role of public administration.** The Asian Athletic Games Apartments and the Olympic Games Apartments built during the second half of the 1980s represent the culmination of twenty-five years of development of mass housing by the Korea Housing Corporation (KHC), since 1961. They bear testament to the role of the public housing agency, not only in promoting the construction of mass housing but also in supporting research and development in the field, following the path set by its original model, the Japan Housing Corporation (JHC) in terms of the development of an autochthonous mass housing culture and its diffusion through collaboration with contractors, academia and external consultants.
- **Authorship.** The conditions surrounding both cases were rather exceptional. They were built in occasion of two international sports events meant to showcase the successful modernization of the country in a climate of Cold War, and the designs were the outcome of international competitions. This speaks of the symbolic importance the two projects had and explains the uncommon significance the figure of the architect had in them, in a sector the profession has largely been alienated from by the developmental social contract between the administration and the industrial conglomerates. Speaking of how he saw his role as the

12 See subchapter '21.2 Habitat as a Dialectic Complement to the Functional City' in Chapter 21, Volume 01.

main responsible for the design of the Olympic Village Apartments after winning the competition, architect Woo Kyu-sung has stated: *'From an ideological point of view, there were at the time questions about why one single person would design the whole thing, instead of involving other architects. But I knew this had to be a very robust structure involving many intricate details. Because of the tight schedule; the scale; and the cultural aspects, I had no choice to involve other designers, as in the Barcelona Olympic Village. So, as a result, it is very different: the method of designing, building, mentality. The whole thing is based on my way of thinking what at the time, in that particular site, knowing the housing history of Korea, and knowing Korean society, was the right answer as a professional'* (from an interview with the architect, July 13th, 2015). The explanation is a claim for specificity in the design of mass housing, in response to the particularities of the site and the commission. It also reinstates mass housing as a fundamental task for architects and, in so doing, renews the social purpose of the profession.

C. Selective borrowing by the market

Selective borrowing by the forces of the market: While Ward focuses on the diffusion of modern planning ideas and practices among different countries (Ward, 2000), the nature of the development of mass housing in Seoul shows how the evolution of planning ideas within the same country over time can also follow some of the characteristics of his typologies of international diffusion.

Ward's approach is largely based upon a colonial and post-colonial understanding. This is, the different types of relationships of power and influence between two countries lie at the base of his taxonomy of international diffusion of modern planning models, even though he acknowledges the wide diversity possible within that. His fundamental distinction is between countries which have 'borrowed' planning models, implying a greater role of the importing countries in controlling the diffusion process; and countries where those ideas have been 'imposed' by an exporting country which is the main driving force of the importation process (Ward, 2000, p. 43).

A set of new conditions at the end of the decade of the 80s interrupted the development of site planning strategies based on the arrangement of clusters catered to the emerging modern urban environment of Seoul initiated with the Asian Athletics Apartments and the Olympic Village Apartments: the prevalence of a new type of urban renewal policy – the private residential renewal process, denominated *jae-gun-chuk* (재건축, or JGC[13]; the shift to private development[14]; and the need to increase residential density in order to address the chronic housing shortage, while at the same time yielding economic benefits for land owners and the private construction companies involved in the renewal processes. In spite of the new demands brought in by these changes, no specific design solutions were deployed in order

13 See '8. Mass Housing as a Tool for Inner City Renewal' in Chapter 7, Volume 01.

14 See subchapter '6.5 3rd Phase B 1990 – 1997: Emergence of the Satellite Cities and Decrease of Population in Municipal Seoul' in Chapter 6, Volume 01; and '2.7 Private Development versus Public Development of Mass Housing' in Chapter 2, Volume 02.

to cope with them. Without the public housing authority leading research and development in mass housing, private developers simply borrowed spatial formulas developed during the preceding decade, simplified and stripped them from their original community-building aspirations, and maximized them in order to match the increasing housing demands. This selective and non-innovatory process of borrowing through the simple emulation of models without their conceptual basis, even though the models had been developed locally rather than abroad, shares many characteristics with the selective borrowing type of diffusion of ideas and practices described by Ward, as explained earlier (Ward, 2000, p. 47). Except that in this case, the borrowing does not take place between two countries but between the public housing authority and private developers.

In other words, the emergence of private developers-builders interrupted innovation in mass housing. Original site planning strategies based on arrangements of clusters developed by deconstructing and hybridizing international urban models with local ideas and practices under the patronage of the public housing authority were appropriated and selectively deployed by the market, without consideration for the conditions and the goals which favored their original formulation. In the process, they lost their community-building ideals to become mere spatial organization strategies. Cluster layouts lost their social agenda but were adopted, generalized and standardized as practical technical and formal solutions, since the planned provision of common facilities, open spaces and parking did in fact contribute to a better residential environment and thus were more marketable. At the same time, they became neutral, uniform and quantifiable in order to be more profitable as consumer goods.

THE NEOLIBERAL TURN

The shift towards the private development of mass housing was related to a general neoliberal turn in Korean society. The transition towards private development had started in 1976, but the developmental state managed to keep the capitalist class in check due to its strong interventionism of the economy. By the mid-1980s though, the chaebol had accumulated enough power to challenge the grip of the regime, and initiated their own version of neoliberalization by protecting their privileges and avoiding the government's regulations (Harvey, 2005, p. 108), in parallel to the gradual process of democratization during the decade. The East Asian financial crisis of 1997 brought an abrupt end to the South Korean developmental regime, and the intervention of the International Monetary Fund (IMF) restructured the economy, deregulated the markets and consolidated the neoliberal turn.

STANDARDIZATION OF FOUR SCALES IN APAT'U TANJI

The shift to private development of mass housing during the 1990s coincided with two enormous tasks: the construction of the satellite cities beyond the Seoul Greenbelt (in Ilsan, Bundang, Jungdong, Pyeongchon and Sanbon); and the progressive increase of Joint Redevelopment (JR) urban renewal processes through mass housing estates (including both Public Residential Redevelopment -재개발, or JGB-, and Private Residential Renewal -재건축, or JGC[15]. The combination of an enormous demand plus the competition among private developers could have been a unique occasion to push the development of mass housing based on the concepts of habitat, scales of association, and clusters initiated by the public housing agency during the preceding decade. But that was not the case. Due to the chronical shortage, housing was still a captive market with limited supply. On top of that, the developmental regime's intervention of the economy meant that there were only a few competitive suppliers

15 See '8. Mass Housing as a Tool for Inner City Renewal' in Chapter 7, Volume 01.

who monopolized this market. Future residents-customers did not have another choice but to purchase what was available, so there was no pressure to pursue innovation. This was a missed opportunity to build upon the innovations introduced up until then in order to further develop a genuine local culture of mass housing.

Instead, the adherence of the private sector to a selection of tried and tested spatial models developed earlier but stripped of their original community-building intentions and their reinterpretation of traditional living quarters, effectively simplified the production of mass housing by standardizing the design of *apat'u tanji* in four different areas: site planning, building typologies, residential unit layouts, and commercial facilities in order to optimize residential density and economic profit. Developers-builders simply differentiated themselves through superficial aspects such as formal features, the quality of construction materials, and later with landscape features.

Site Planning: In spite of the adoption of formal organizations based on clusters, private development of mass housing since the early 1990s did not adopt many of the features which characterized the initial site planning through clusters by the public housing authority in the preceding decade, namely: the creation of distinct scales within the complex; a legible spatial structure; the composition of cohesive façades; the inclusion of references to traditional residential features; the community-building agenda; and diversity and articulation of open space. While originally the adoption of clusters in relationship to the concepts of habitat and scales of association escaped the formulation of fixed spatial solutions, favoring instead the consideration for the specific context of a given commission, this was lost in the shift to private development. The notion of authorship was also discarded, and mass housing estates became anonymous products which favored coherent corporate brand identity rather than site specificity or the agency of a designer.

In this stripping of their original qualities, clusters as organizational devices rather than as social arenas were also optimized in quantitative terms in order to increase residential density, built area and economic profit. The transition from a *zeilenbau* site planning towards arrangements of clusters in the middle of the 1980s had not brought any noticeable impact on residential density. But with the transition from public to private development with the turn of the decade, residential density was increased 2.5 times, floor area ratio (FAR) doubled, and building heights were uniformed at seventeen floors, optimizing construction systems and doing away with the stepping profiles of the clusters.

Even though compositions aggregating groups of buildings around a common space became the norm, they were not part of a cohesive system involving other site planning strategies such as access and circulation strategies; uses and definition of open space; and approach to parking. The renovation of the Mapo Apartments from 1993 is a good case in point. The plan featured a series of clusters structured along a central spine. Instead of segregating flows so this central spine would be dedicated to pedestrians, while vehicles could loop around the perimeter and access the clusters from it, the central spine was made into a vehicular boulevard with sidewalks along it. This move did not only prevent the desirable separation of flows, but also created a redundant vehicular network. The project also reversed the trend towards the increasing variety of open spaces by vastly simplifying and reducing them compared to previous cases, and it multiplied parking areas and vehicular circulation, to the point that 47% of the total site area was asphalted. Similarly, when by the turn of the 2000s parking facilities were placed completely in underground levels, thus liberating the ground floor for new uses, the landscapes developed hardly contributed to a cohesive site structure. In the case of the Jamsil Ricenz Apartments of 2008, large areas of this newly conquered open space were dedicated to inaccessible buffer zones; there was no clear structure of the development; and there was no consideration for linking the site with wider urban green networks.

Building Typologies: Building types show little development since the Asian Athletics Apartments and the Olympic Village Apartments, except for a noticeable increase in height, pushing the limits of the construction systems already developed by then. The number of floors doubled from the Mapo Apartments of 1993 to the Jamsil Ricenz Apartments of 2008, from 17 to 33 stories. Vertical organizations based on a vertical core with an elevator and two units per floor became the predominant type. They could be used in multiple combinations - as stand-alone towers, forming linear compositions, or as clusters in L-shaped, C-shaped or U-shaped plans.

The use of load-bearing walls, built with tunnel form technology[16], required all units within the same vertical module to be identical. Diversity of unit sizes within a cluster was achieved by grouping modules of different sizes and layouts in the Asian Athletics Apartments and the Olympic Village Apartments, guaranteeing a diversity of households. With the transition to private development, this diversity was avoided, as residents preferred not to be mixed. Thus, a process of social segregation within the tanji developed by private developers ensued, and different clusters would be dedicated to different apartment sizes, and thus different household types and income brackets.

Residential Unit Layouts: The transition to private development also signaled the consolidation of the standard nLDK unit type. This topic is one of the main subjects of the research and is expanded in Section 4, 'The Unit Scale'[17]. The main characteristics were:

- Double exposure.
- Entrance from the middle of the structural bay in order to optimize internal circulations.
- Street shoes were left in a buffer space at the entrance. The rest of the unit was one step higher. This base contained the hot water radiant floor system.
- The nLDK central space ran the full depth of the unit.
- The kitchen was fully integrated within this central space.
- Corridors had fully disappeared. Bedrooms were placed on both sides of the central nLDK space.
- Bedrooms were accessed through intermediate threshold spaces to provide privacy from the central nLDK space.
- Bathrooms were located in the middle of the structural bay, together with other utility shafts and/or in-built storage spaces.
- There were balconies on both sides.
- Limited built-in storage.

While the Olympic Village Apartments offered five different basic types and a total of twenty variations in order to cater to different household needs, the shift to private development vastly reduced typological variation. The Mapo Apartments from 1993 featured basically one housing type, which was enlarged or reduced and had more or less rooms added to in order to provide a range of sizes. The unit plans of the Jamsil Ricenz Apartments built fifteen years later do not show a great deal of typological evolution, except for a shift of the vertical access core towards the northern façade, which pushed the entrance to that side;

16 Tunnel form is a system of formwork for reinforced concrete structures which allows casting walls and slabs in one operation in a daily cycle. The advantages of the system are: normalization of the design of the structure; speed of construction; and relative economic efficiency, by combining the speed, quality control and accuracy of off-site production with the flexibility and economy of in-situ construction.

17 See Chapter 22 in Volume 01 and Chapter 20 in Volume 02.

the reduction of balcony areas; and a stronger articulation of the façade.

The adoption of load bearing walls had an enormous impact on this lack of typological evolution, since they favored plans composed of rigorous arrangements of rectangular cells for structural rigidity, fixing the location of interior partitions, and of all the utilities which were embedded in shafts contained within them. This greatly hampered the flexibility of the units and their adaptation by residents over time.

Reflecting upon the adaptations residents had done to his original design of the units of the Olympic Games Village Apartments of 1988, architect Woo Kyu-sung expressed: *'Some people ask me whether the adaptations that have occurred in the façades or in the duplexes bother me, but I am fine with it. It is part of the city. Housing and the city are supposed to change, as people live in it. It is fine. People tried to build a floor into the double space because they were not used to it. Most of the balconies are covered now. Housing is housing, people live in it, and so it is supposed to change'.* He referenced John Habraken's 'Supports' theory: *'Supports and infill are good. The design is strong enough, so it can take it. People make infills. So my design is like a support and the infill done by the people is good. The form of the design is strong enough so it can take it. That was also part of the intention. The façade reflects that rigor, the strength of the structural elements provide a framework to the whole, no matter what the infills are'* (from an interview with the architect, July 13th, 2015). With his design, Woo took a stand on the need for greater flexibility in the design of housing, a direction which would be not pursued by private developers later on.

Commercial Facilities: The shift to private development also consolidated and standardized commercial facilities. Shopping centers had undergone a great deal of experimentation during the development of apartment complexes in terms of building typology, location within the tanji, their role within the complex, and in relationship to the surrounding urban context.

The commercial areas of the Asian Athletics Apartments and the Olympic Games Apartments had been planned in concordance with the central public spaces of their *tanji* and fulfilled a symbolic function during the games. This was evident in the civic and representative character of the facilities after the events. In contrast, the commercial areas built after the shift to the private sector featured pragmatic designs based on the optimization of floor areas.

Linear arrangements (*no-seon sangga*) were finally discarded in favor of compact shell and core structures comprising several floors and basements, called *sangga*. Their main features were:

1. A stack of free-plan floors that could be partitioned in different ways in order to accommodate businesses of different sizes.
2. The free plan was made possible by the use of a structure of reinforced concrete columns.
3. Those free plans could be used in a variety of ways: either dedicated to one large tenant, such as a bank or a supermarket; subdivided in small stalls as interior markets with light partitions; or compartmentalized in individual shops along corridors.
4. Cores of services such as elevators, staircases and bathrooms were located in the periphery not to interfere with the free plan.
5. They would be typically located in the boundary of the housing estate, accessible to outsiders, following Clarence Perry's 1929 concept of the neighborhood unit –albeit with a much higher density.
6. In tanji with access to the subway network, the basement levels of the commercial facilities acted as thresholds, connecting directly to the stations. The basement levels also contained parking spaces for customers, storage spaces and delivery areas.








SECTION 4 / THE SCALE OF THE HOUSING UNIT
THE LIVING ROOM AS A POLITICAL ARENA: THE FORMATION OF A STANDARDIZED MODERN DOMESTIC SETTING

Figure E-1. Jung Yeon-doo, *'Southern Rainbow'* portrait series.
In this project, based on voluntary participation, residents of the 'Southern Rainbow' *apat'u tanji* offer the viewer a peak into their domestic privacy. Each participating family was asked to pose in their living room with freedom of posture and attire. Only the frame of the camera and its location within the room were fixed. The project stands as a testament of the representation each household makes of themselves as a family, of the way they customize the same basic unit in order to fulfill their needs, and of the relationship between the family as a social unit and the space that is made available to them.

"Like law (one of its models), culture articulates conflicts and alternately legitimizes, displaces, or controls the superior force. It develops in an atmosphere of tensions, and often of violence, for which it provides symbolic balances, contracts of compatibility and compromises, all more or less temporary. The tactics of consumption, the ingenious ways in which the weak make use of the strong, thus lend a political dimensions to everyday practices."

Michel de Certeau (1988). *The Practice of Everyday Life* (S. Rendall, Trans.). Berkeley, CA: University of California Press (pp. xvii)

"The following studies seek to treat practical activities, practical circumstances, and practical sociological reasoning as topics of empirical study, and by paying to the most commonplace activities of daily life the attention usually accorded extraordinary events, seek to learn about them as phenomena in their own right."

Harold Garfinkel (1967) *Studies in Ethnomethodology.* Polity (pp. 304).

"The cries for rationalism, standardization and for efficient living only deal with part of the problem; these may be important issues but they are contemplated in the proper perspective. The overall problem is spatial, it is the creation of living space. This is a spiritual problem for which there are only creative, not mathematical or organic solutions. I have therefore forgone to set up any kind of rule-book but I have instead opted to select collaborators for this project who I feel have contributed in interesting ways to the phenomenon of new living."

Mies van der Rohe (1927) 'Werkbund-Ausstellung Die Wohnung'. In A. von Vegesack & M. Kries (Eds.) *Mies van der Rohe : Architecture and Design in Stuttgart.* Barcelona and Brno: Vitra Design Museum (pp. 136).

SECTION 4 / THE SCALE OF THE HOUSING UNIT
THE LIVING ROOM AS A POLITICAL ARENA: THE FORMATION OF A STANDARDIZED MODERN DOMESTIC SETTING

Housing makes up for the large majority of the built environment in cities. Up until the modern period, this built environment was produced anonymously through building methods and technologies that developed from experience and common sense in each culture. The know-how required for the construction of housing was taken for granted and neither was it questioned nor there was the need to articulate it in a discipline. It manifested itself and evolved through the interactions among master builders, owners and users (Habraken, 2000, p. 2).

We call 'residential typology' to the functional and spatial domestic organization that reflects a local adaptation to a climate, a social structure and a form of city-making resulting from everyday interactions. Since the modern period, the professionalization of work, industrialization, the emergence of the capitalist mode of production and urban demographic booms have transformed the practice of architecture in a way that nowadays it also encompasses domestic settings. All of a sudden, those built environments that up until then were not questioned, began to be re-examined and were approached as design problems in need of professional solutions. As Habraken noted, *"what used to remain unquestioned has been taken up as a design problem to be solved: nothing may be taken for granted… Built environment, the ubiquitous, stable, ordinary background for architectural innovation, is now itself being reinvented by professionals, bit by bit, time after time."* (Habraken, 2000, p. 2)

Mass housing poses an unavoidable compromise between those who are to live in it and those who regulate, plan, design and build it. To make sense of dwelling is the result of negotiations between individual representations and aspirations of the residents and how they are being told to live. Dwelling is inherently a political act.

This section looks at the scale of the building type and the housing unit in order to describe how the development of a standardized unit type has shaped modern Korean domesticity. It proposes an approach to the scale of the housing unit as a modern vernacular typology, resulting from a series of dialectical tensions between opposing paradigms present throughout the modern housing project: the globalizing aspiration of modernity and its individual implementations; the quest for control of the modern state and the protection of domestic privacy; and finally the role of experts in defining how people should live and the personal aspirations and representations of the dwellers.

STRUCTURE AND METHODS

This dialectic tension structures the Section. Chapter 21 introduces the idea of dialectic tension as a defining characteristic of modern architecture and urbanism, and explores five of these tensions relevant to the evolution of mass housing in South Korea: the conflict between the globalizing aspirations of modern architecture and its localized implementations; the attempt to define 'habitat' as a complement of the Functional City; the idea of 'home' as a controversy between the control of the administration and the freedom of the individual; Henri Lefebvre's double approach

to ‘everydayness’ as both a tool for the manipulation of the population and as a possibility of emancipation from this control; and finally the concept of ‘dual cities’ as a defining characteristic of colonial cities. These arguments are exposed from relevant literature on the topics. This section is complemented by Section C in Volume 02.

Chapter 22 expands the narrative of modern architecture as an instrument of control to situate the formation of the nLDK standardized unit layout. The main material of the chapter is a timeline of apartment layouts which demonstrates graphically the evolution of the typology. The plan layouts come from the 12 case studies investigated in Section B of Volume 02, and the explanation of the relevant features of the type is illustrated with photographs from field work research. This typological study of the standard unit is complemented with a selection of precedents which influenced its emergence and development, and with a segment which exposes the role of the Korean Housing Corporation (KHC) in defining a modern apartment type in correspondence to the introduction of new lifestyles through the publication of a periodical magazine, the ‘주택 (*‘Chutaek’*) House & Home’ magazine. The sociological aspect of the chapter is provided through an analysis of the social engineering project of the developmental regime through population policies implemented as part of the five-year economic plans. An introductory segment frames the relationship between modern architecture and the controlling aspirations of the modern estate.

Chapter 23 adopts the perspective of the residents in order to offer a glimpse of the vernacular culture of inhabitation developed as residents have interpreted the apartment lifestyle in order to adapt it to their needs. The main materials of the chapter are a timeline featuring the adaptations residents have implemented at the scale of the complex included in the Case Studies in Volume 02 (Chapters 7 to 18); and the conclusions from semi-structured interviews with three apartment residents which address adaptations to the housing units. The adaptations at the scale of the complex are divided between physical changes (changes in the ‘hardware’), and changes in the way spaces were meant to be used (changes in the ‘software’). Given the diversity of scales at which the different tactics operate, a range of graphic methods have been adopted. The most common is the aerial axonometric, which allows locating the adaptation within the overall complex and conveys its spatial qualities. Evidence of residents adaptations could not be found in some cases, either because they do not exist anymore -Case Study #5, Jamsil 2-tanji Apartments-, or because of the strict regulations set in place prevent such adaptations, such in case studies #06 (Hyundai Apkujeong Apartments) and #11 (Samsung Tower Palace). Also, some of the adaptations featured in specific cases may be common in other apartments as well but they are not shown.

The interviews took place at the homes of the interviewees (a sample of the interview can be found in Appendix 3, Volume 02). The goal of the interviews was not to so much to collect data that was conclusive or even representative – that would have required a much more expansive effort and was not the scope of the thesis – but to give voice to the residents and to convey a sample of how they saw themselves and their ongoing act of inhabiting. The approach is based on Michel de Certeau’s understanding of residents not as passive consumers but as active producers by way of their tactical, everyday practices. In parallel to the interviews, the apartments were surveyed, measured and redrawn in detail in one-point perspective plans in order to provide a spatial account of the interviewee’s domestic setting and of their practices of inhabitation. They are included in Chapter 21, Volume 02. Finally, Chapter 24 summarizes the main findings and expands them in three main topics which are recurrent throughout the development of the section.

CHAPTER 21
MODERN ARCHITECTURE AND URBANISM AS A DIALECTIC TENSION BETWEEN OPPOSITES

This chapter introduces the idea of dialectic tension as a defining characteristic of modern architecture and urbanism, and explores five of these tensions relevant to the evolution of mass housing in South Korea. Namely, the conflict between the globalizing aspirations of modern architecture and its localized implementations; the attempt to define 'habitat' as a complement of the Functional City; the idea of 'home' as a controversy between the control of the administration and the freedom of the individual; Henri Lefebvre's double approach to 'everydayness' as both a tool for the manipulation of the population and as a possibility of emancipation from this control and finally the concept of 'dual cities' as a defining characteristic of colonial cities.

The understanding of reality in terms of complementary relationships between opposing factions was embraced by the thinking of Aldo van Eyck, one of the original members of the Team X. For the Dutch architect, the role of the artist was to discover these oppositions and to bring them into a dynamic balance (Pedret, 2002). Ultimately, the maintenance of dialectic relationships between polarities was a necessary condition for the development of a genuinely contemporary architecture (Strauven, 2007). In adopting this approach, he aligned himself with what he saw as a 'new consciousness' that had developed since the beginning of the twentieth century with avant-garde movements such as *de Stijl*, *neues bauen* and *La Nouvelle Realité* (Pedret, 2002).

21.1 MODERN ARCHITECTURE AND URBANISM, BETWEEN THE UNIVERSAL AND THE INDIVIDUAL

The origins of modern architecture can be traced to the innovative ideas of expressionism and the Secession. They were also related to urban changes brought about by industrialization during the nineteenth century and linked to advanced social programs in socialist municipalities of the Netherlands and new community tendencies in Central and Northern Europe at the beginning of the twentieth century (Solà-Morales, 1989, p. 7). Soon a new culture of the big city – or 'metropolis' – evolved. Within that, the development of housing became one of the main themes of urban growth at a new scale. The provision of housing demanded by the new metropolises could not be coped with piecemeal interventions, and soon the construction of the city went from one house at a time to the planning of whole sectors. Especially under the influence of the garden-city movement, housing projects became testing beds for new urban ideas – what has been called the 'urban project' or 'urban design', as an intermediate scale in between architecture and planning. References of this rich and heterodox tradition are the work of the Amsterdam School, Oud and Dudok in the Netherlands, Saarinen and Markelius in Helsinki, Pedersen in Norway, Plečnik in Ljubljana, Stein in the US, Bourgeois in Brussels, etc. This tradition of the urban project as the intermediate scale between that of architecture and the city was lost from the historiography of modern architecture since the 1930s, due to the simplification of the diversity of modern architecture into a unified

style and to the hegemony of the discourse of the Functional City.

The 1932 exhibition *'Modern Architecture: International Exhibition'* at New York's MoMA and the accompanying catalogue '*The International Style*' played a vital role in the creation of a united architectural movement and its internationalization. According to Philip Johnson and Henry-Russell Hitchcock, curators of the exhibition, *'this contemporary style, which exists throughout the world, is unified and inclusive, not fragmentary and contradictory'* (Hitchcock et al., 1932). It is well known the role the exhibition played in establishing three stereotypes that would mark the course of modern architecture from then on: the reduction of the diversity of Europe's architectural panorama to a common movement; the alienation of the avant-garde from its socio-political concerns by presenting it as a formal style; and finally the separation of modern architecture from any specific local politics by presenting it as 'international' (Crinson, 2012).

The MoMA exhibition was therefore a key tool in separating the forms of the Modern Movement from their sociopolitical content, allowing them to be adopted in completely different political contexts. This universalization of the Modern Movement as a style also enabled it to be assimilated by the consumer society and large-scale capitalism after World War II. As a result, the so-called 'International Style' gradually produced *'the aesthetic and infrastructural base of the global modernity in which we now live'* (Crinson, 2003).

In the field of urbanism, this universalizing attitude was represented by the Functional City model that arose in 1920s Germany and was typified after CIAM IV (1933) in Sert's *'Can our cities survive?'* (1942) and Le Corbusier's *'La Charte d'Athènes'* (1943). The later showcased an urban model Le Corbusier had been developing since the 1920s with the Ville Contemporaine (1922), the Ville Radieuse (1924) and the Plan Voisin (1925). In its different iterations, housing districts would be constructed using pre-fabricated techniques upon ground cleared from any pre-existence and separated from other functions. A typology of apartment towers known as *'unités'* would contain up to 2,700 residents and function as a vertical village, while alternatively he also proposed linear articulations of housing slabs.

The Functional City sought to offer solutions to the chaos of the nineteenth century European city based on major philosophical, political and sociological principles. These principles defined a planning system based on the city divided in sectors, each dedicated to one of the four basic functions of residence, work, leisure and mobility in a segregated manner. It was a vision that and ignored pre-existences, either natural or man-made, and at the same time it was essentially a universal urban paradigm in its willingness to provide solutions that could be carried out anywhere (Pedret, 2002).

By favoring global solutions and positions of propaganda, the diversity, heterogeneity and specificity of the modern urban project and of mass housing in particular became sidelined. As Manuel de Solà-Morales has explained,

> *'The vast theoretical gap between architecture of buildings and city planning [...] was occupied instead by a great deal of ideology. The brilliant intellectual and organizational capacity of Le Corbusier and the deliberate bias of Gropius and Giedion toward positions of propaganda pushed the defenders of the urban project, as an intermediate field of discussion and of work, onto the sidelines, resulting in the assembly taking ideological refuge in the themes of the Functional City and the Athens Charter'.*
>
> (Solà-Morales, 1989, p. 11)

Despite these stereotypes, the transition towards a single, universal architectural language has been a much more complex process than envisaged by the MoMA exhibition of 1932. Even today, we still find national features and attitudes that are prospering alongside this modern universalizing language, questioning it and redefining it continually according to local needs and traditions.

21.2 'HABITAT' AS A DIALECTIC COMPLEMENT TO THE FUNCTIONAL CITY

After World War II, a new generation of modern architects insisted on the need to rethink modern urbanism in order for it to take into account social, cultural, historical, geographical, climatic and even ethnic issues. These architects sought to complement the universal aspect of modern urban planning with greater awareness of particularities and identity, and therefore individuality. This interest was formalized in the search to define a *'Charte de l'Habitat'*, starting at CIAM 7 in 1949. The result of this process was the last manifesto on modern architecture, which was expressed in the 1954 *'Statement on Habitat'* and in a second version in the 1960 *'Doorn Manifesto'*.

According to the manifesto, the new urban paradigm was seen not as a substitute for the *'Charte d'Athènes'*, but rather as its dialectic complement. Instead of opposing the Functional City, this new generation of modern architects believed that post-World War II urban complexity should be explained in terms of the *simultaneity of two opposing paradigms:* not the individual versus the universal, but rather the universal and the individual at the same time (Pedret, 2002). Nevertheless, disagreements between the young generation and the old guard of the CIAM in regards to the concept of habitat culminated with the demise of CIAM altogether.

> *"the four basic functions of urbanism set by the CIAM in the Charte d'Athènes in 1933, their balance and their ordered relationships. They must also be rebuilt."*
>
> (Giedion, 1961)

The end of World War II was also the end of a phase of modernity based on the paradigm of infinite progress. The tasks of the members of the CIAM during the urban reconstruction efforts made evident the need for a new urbanism capable of responding to the complexity of post-war cities, beyond the principles of the Functional City. After the war the CIAM expanded both their influence and scope. While before the war they dealt mostly with center-European issues, after the war the congresses attracted individuals from all over the world, and with them the range of concerns was also broadened. Aldo Van Eyck wrote in 1954,

> *"Since the war we have become more and more aware; […] a profounder approach will be imperative."*
>
> (Van Eyck, 1954)

The concept of 'habitat' became the driving principle of a new sensibility towards the holistic reformulation of the relationship between humanity and the environment. Le Corbusier introduced during the CIAM 7 in Bergamo (1949) the need to complement the Charte d'Athènes with a new charter on habitat, but did not clarify the meaning of the term, neither what the content of this new charter should be. Despite this uncertainty, habitat was to become the central topic of the different congresses until CIAM 10 (Dainese, 2013).

During CIAM 8 in Hoddesdon (1951), the concept of habitat was approached from the notion of 'core'. The London group MARS defined core as *'the element which makes a community a community and not merely an aggregate of individuals'.* Including 'core' in discussions about the city involved a concern for the context and an understanding of any intervention as a discussion among the different forces on the site. It also involved respecting the historical process of its formation (Dainese, 2013). Giedion wrote:

> *"Our current interest in the core is part of this human scale and it is part of man's rights against the tyranny of machinery."*
>
> (Giedion, 1951)

It would not be until CIAM 9 in Aix-en-Provence (1953) when Vladimir Bodiansky attempted a definition:

> *"Habitat (L'Habitat) is not only a human shelter.*
>
> *It is a cell of a socially organized body.*
>
> *[…] Habitat insures for man the accomplishment of his spatial,*
>
> *physiological, spiritual and emotional needs and protects him*
>
> *from weather and atmospheric conditions.*
>
> *It integrates individual and family life in the manifestations of social and collective life."*
>
> (Bodiansky, 1953)

In the same document, though, the author confessed the difficulty in defining the concept:

> *"The exact etymology of the word "Habitat" which has no equivalent in some languages and which gives rise, even in French, to Byzantine discussions, matters little."*
>
> (Bodiansky, 1953)

This definition was intended to be a base upon which to build a *Charte de l'Habitat* proper during CIAM 10 in Dubrovnik (1956). A small research group was formed to prepare the drafting of the new document prior to the congress. The members were part of a newer generation of the Modern Movement: Alison and Peter Smithson, Georges Candilis and Shadrach Woods, Jaap Bakema and Aldo Van Eyck, Rolf Gutmann, William Howell and John Voelker. They would be known as the 'Team for the 10 (congress)', or simply 'Team 10'.

The *Charte de l'Habitat* would become the last manifesto of the Modern Movement. In spite of being structured as a manifesto (precise, declarative, affirmative and carrier of a truth that must be revealed in order to be followed), it was not as much a revelation as it was a declaration of intentions trying to define a fleeting concept (Vázquez Ramos, 2013). The *'Statement on Habitat'* is the older text, written as a conclusion of the first meeting of the Team 10 in Doorn between January 29th and the 31st, 1954, in order to prepare CIAM 10, where the chapter was to be properly discussed. The Doorn Manifesto was a later adaptation by Alison Smithson, popular in British magazines after the famous publication of the work of the Smithsons in issue #3 of the Uppercase magazine of 1960 by Theo Crosby, which in fact ended up being the most widely known. The statement is reproduced on the next page.

While the Statement initially acknowledged the historical value of the '*Charte d'Athènes'* in addressing the chaotic conditions of nineteenth century cities in Europe, it soon pointed out its limitations in exploring the full potential of urbanity in the twentieth century. The criticism to the Functional City model was made evident in the alternative proposal laid in the second part of the Statement: instead of organizing the city according to the four functions of housing, work, leisure and mobility, the need for a 'human association' as the first principle for urbanism was introduced, tightly linked to the physical, social and productive conditions of a locale.

In order to illustrate the concept of human association, the members of Team 10 adapted Patrick Geddes' regional planning diagram of the 'Valley Section', conceived at the beginnings of the twentieth century (see Figure 21-2). In it, the Scottish intellectual presented several forms of human settlement according to different stages of production and urbanization, in relationship to the natural environment: from the farm linked to agricultural production, to the proto-industrial village and all the way to the industrial city at the end of the valley.

The diagram of scales of human association became the conceptual basis to explain the close relationship between the construction of the human environment and the natural context, from the home to the city. It summarized a new way of understanding the world encompassing ecology, society and culture. This new planning paradigm aimed to take into account social, cultural, historical, geographical, ethnical and climate differences of particular settlements, but at the same time had a universalist vocation since it was conceived as a tool for comparison among different communities

STATEMENT ON HABITAT

1. *La Charte d'Athènes proposed a technique which would counteract the chaos of the 19th Century, and restore the principles of order within our cities.*
2. *Through this technique the overwhelming variety of city activities was classified into four distinct functions which were believed to be fundamental.*
3. *Each function was realized as a totality within itself. Urbanists could comprehend more clearly the potential of the 20th Century.*
4. *Our statement tries to provide a method which will liberate still further this potential. As a direct result of the 9th Congress at Aix, we have come to the conclusion that if we are to create a Charte de l'Habitat, we must redefine the aims of urbanism, and at the same time create a new tool to make this aim possible.*

Urbanism considered and developed in the terms of the Charte d'Athènes tends to produce 'towns' in which vital human associations are inadequately expressed.

To comprehend these human associations we must consider every community as a particular total complex.

In order to make this comprehension possible, we propose to study urbanism as communities of varying degrees of complexity.

These can be shown in the Scale of Association: We suggest that the commissions operate each in a field not a point of the Scale of Association, for example:

1. *Isolated buildings*
2. *Villages*
3. *Towns*
4. *Cities*

(Note: These fields are sufficiently finite for general purposes but there may be new forms of association, new patterns of community that replace the traditional hierarchy)

This will enable us to study particular functions in their appropriate ecological field. Thus a housing sector or satellite of a city will be considered at the top of the scale (under City, 4), and can in this way be compared with development in other cities, or contrasted with numerically similar developments in different fields of the Scale of Association. This method of work will induce a study of human association as a first principle, and of the four functions as aspects of each total problem.

Figure 21-1. 'Statement on Habitat', summary of the first interim meeting to prepare CIAM X.
Doorn, The Netherlands, 29-31 January 1954.
Reproduced from Contandriopoulos & Mallgrave, 2008.

at the same point in the scale of association, or numerically with settlements in other fields of the scale (Figure 21-3).

The Statement finalized by stressing the fact that, even though the Scale of Association was to be the main principle of urbanism, the four urban functions still needed to be taken into consideration. This is, with the Statement of Habitat, the younger generation of CIAM did not pretend to eliminate the universalizing aspect of modern urbanism. It just intended to add a further layer of complexity by including the categories of the Functional City under the larger umbrella of the Scale of Association. This acknowledgement of difference and of specificity definitely challenged the presumptions of universality of CIAM, but in any case it was meant as a substitute. Instead, the goal was to establish a dialectic relationship between the two approaches (Pedret, 2002).

This dialectic relationship between the individuality of the concept of Habitat and the universality of the Charte d'Athènes had already been very present in Vladimir Bodiansky's text *'For a Charter of Habitat'* of 1953:

"[…] The Charter for Habitat will therefore deal with the precarious, temporary and variable aspect of the building field, while the Athens Charter treats its durable, if not permanent, aspect.

Whereas no half-measures may be tolerated in the application of the Athens Charter, the putting into practice of the Charter for Habitat will consist of a series of researches to bring the most favorable compromises out of a host of contradictory factors.

[…] As opposed to urbanism, which is a long term proposition and which we have the human right to consider as permanent, Habitat is essentially evolutionary.

[…] The Charter for Habitat will be that of the greatest number.

[…] Greatest number implies mass production, repetition of elements, similarity of forms and of finished products.

It is reasonable to think that as regards to the satisfaction of spatial and physiological needs this aspect of the problem of Habitat may be adapted to a theoretical being that may be called "the average man."

Thus, 'standards' must be established to answer to any material problems that present themselves. As for the emotional reactions, or activities of the mind, it would be childish to look for a standard, an average man.

The builders must therefore reconcile these two contradictory aspects of the problem:

- *Satisfy the needs of the body by standard means, which is comfort (commodity).*
- *Create the frame and the forms, so that the spiritual emotional life of man may develop without hindrance, which is pleasure (delight).*

It is in this that the definition of Habitat as an integrated element in a socially organized body, takes on all its significance."

(Bodiansky, 1953)

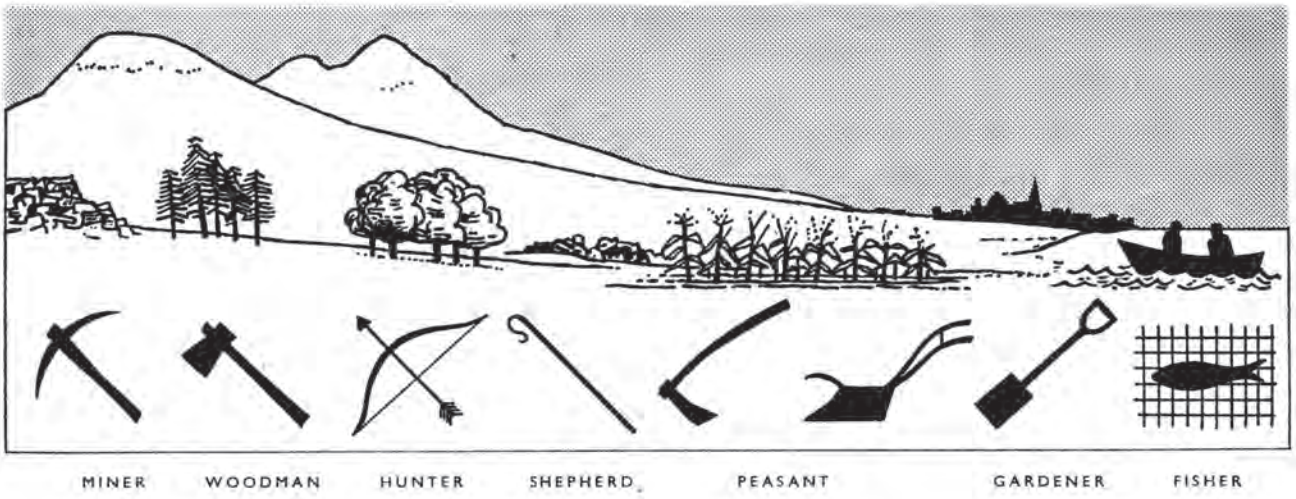


Figure 21-2. Patrick Geddes: *'The valley section from hills to sea'*.
P. Geddes, from the book with the same name, 1923.

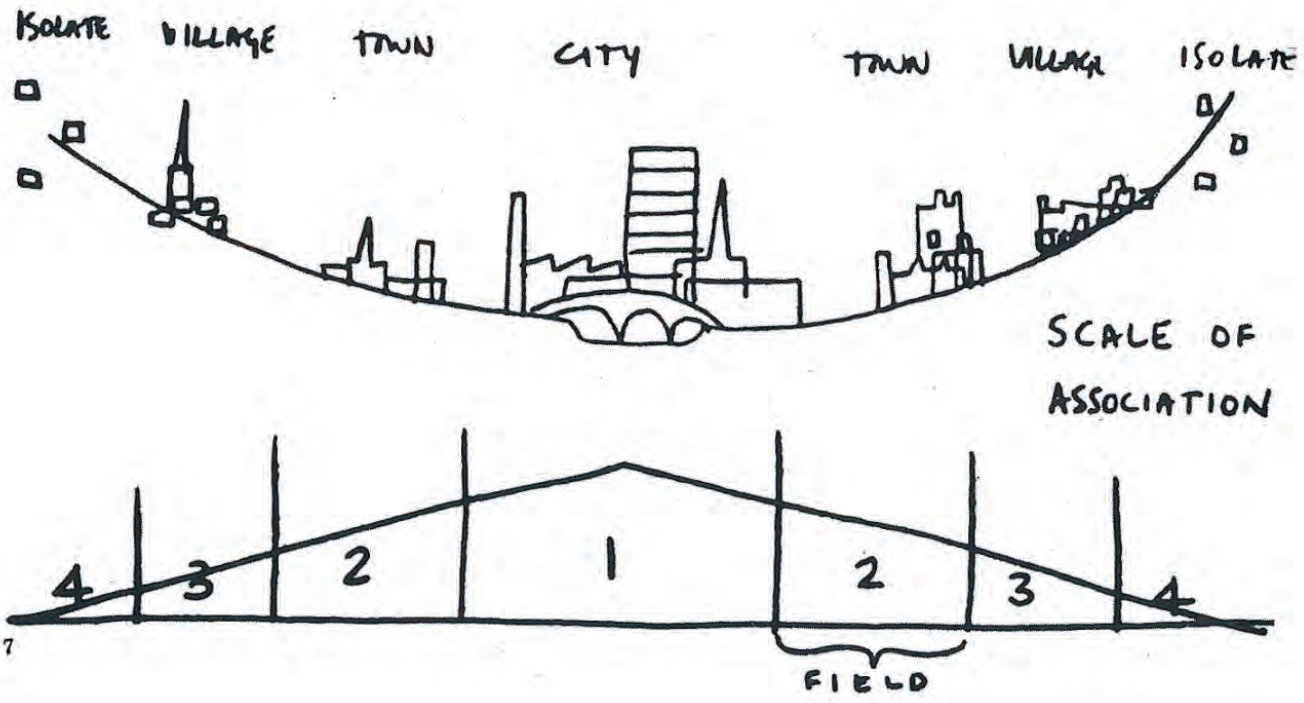


Figure 21-3. Peter Smithson: *'Scales of Association'*.
Interpretation of Geddes' Valley Section (Smithson, 1960).

The text was based on his study *'For a Charter of Habitat'* (Figure 21-4) and on the conclusions from his research entitled *'Moroccan Habitation'* presented at CIAM 9. It is interesting to note the mention on the role of 'builders' (or architects) as mediators of the contradictory aspects that the introduction of the concept of Habitat brought in. The different sets of contradictory terms mentioned by the author can be grouped under the two groups expressed in Figure 21-5.

21.3 HOME AS CONTROVERSY

The concepts of 'home', 'domesticity', and 'comfort', are not part of the mainstream architectural discourse. As Witold Rybczynski ponders in the introduction of his book 'Home'*, 'one would have thought that comfort was a crucial issue in preparing for the architectural profession, like justice in law, or health in medicine'* (Rybczynski, 1986, p. vii).

Why is that architects are not used to deal with such important topics, seemingly essential to their profession? One of the hypotheses in Jeremy Till's book *'Architecture Depends'* addresses precisely this issue. According to the author, there is a *'gap between what architecture – as practice, profession, and object – actually is (in all its dependency and contingency) and what architects want it to be (in all its false perfection)'* (Till, 2009, p. 2). For the author, *'the perpetuation of physical space as an architectural paradigm is about the denial, and subsequent ridding, of those dependencies and presences that lie outside the direct control of the architect.'* He goes further in his argument, by describing how this denial is not *'a trivial matter of pushing aside inconveniences, but part of a rather more grave charge that can be brought upon architects'* (Till, 2009, p. 122), and continues to describe this charge by quoting Lefebvre: *'This space has nothing innocent about it: it answers to particular strategies and tactics; it is, quite simply, the space of the dominant mode of production, and hence the space of capitalism'* (Lefebvre, 1981). Therefore, he proceeds to *'inculpate architects in the wider systems of power and control that have dominated the modern era'.* The way how the professional collective has participated in (or yielded to) these systems of power and control is through the hegemony of the type of space that dominates architectural production. Till denominates this space 'hard space', and characterizes it as: *'Voided of explicit political or social content, hard space is reduced to those aspects of architecture that are easy to commodify (aesthetics and technique) or those aspects of space that are to do with control (efficiency and visibility)'* (Till, 2009, p.122). Since the idea of 'home' means different things to different people, it is highly dependent on individual interpretations and escapes both commoditization and control, and thus the interest of the architectural profession according to Till's argument.

This gap between the reality of the profession and what architects would like it to be, especially in terms of the home, has also been explored by architectural historian Gwendolyn Wright in her book *'Building the Dream. A Social History of Housing in America'*. The book describes thirteen cases of housing models in the US in order to show how domestic architecture has been used to embody social issues. Her approach embraces the tension between *'What kinds of places did these people* [residents] *fashion for themselves and what was proposed for them'* (Wright, 1981, p. xvii). In order to do so, the author presents the idea of 'home' from the point of view of different controversies:

- Home a guarantor of cultural traditions and a protection for private family life VS. a tool for change towards the formation of a new modern society.
- Homes as self-sufficient, individualized houses VS. repetitive units as part of community planning.
- Who decides how the house should be, the people who will live in them (residents) VS. the people who will plan and build it (experts)?
- Family privacy VS. community life.
- Individual freedom of choice VS. governmental control.

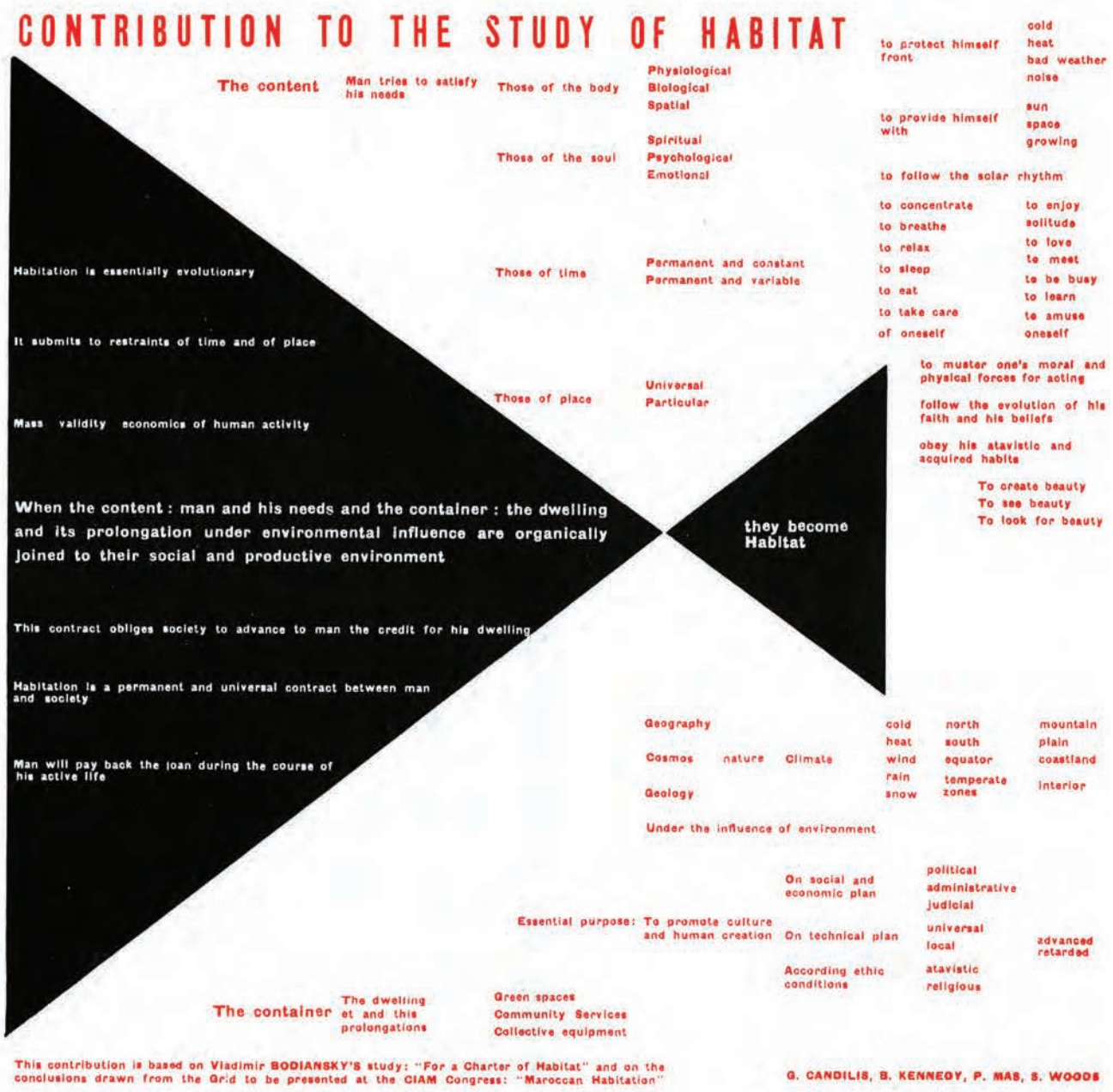


Figure 21-4. Diagram of the *'Contribution to the Study of Habitat'*.
In Bodiansky's text *'For a Charter of Habitat'*, 1953.

Charter of Habitat	Charte d'Athènes
Habitat	Urbanism
Man	Society
Precarious, temporary, evolutionary, variable	Long-term, durable, permanent
Exclusion of momentary material solutions	Objects
Favorable compromises	No half-measures tolerated
Particular	Universal, all men in all countries
Singularity	Mass production, standardization
Individual	Targeted to the "average man"
Needs of the soul (spiritual and emotional)	Needs of the body (spatial and physiological)
Pleasure (delight)	Comfort (commodity)

Figure 21-5. Table of dialectic relationships between the individuality of the concept of Habitat and the universality of the Charte d'Athènes.
After Bodiansky's text *'For a Charter of Habitat'* (1953).

The controversies between the daily reality of living environments and the way experts think about housing, or between individual aspirations and universal solutions, are related to fundamental changes in society due to the emergence of modernization and the development of modern architecture. In particular, to the systems of power and control that have dominated the modern era and to the role of modern architecture in them, to go back to Till's argument, and have been part and parcel of the development of modern architecture and urbanism.

21.4 HENRI LEFEBVRE AND EVERYDAYNESS

French Marxist philosopher and sociologist Henri Lefebvre began a tradition of critical resistance after World War II with the development of the *'critique of everyday life'*, in response to a series of transformations that occurred globally in the fields of politics, economics, technology and culture at a global scale during the 1960s and 1970s[1]. Lefebvre attributed these changes to the emergence of a *'bureaucratic society of controlled consumption'*, the crisis of Marxism and the disenchantment with state socialism, and the institutionalization of critical thinking (including urban theory) in state-run planning processes (Stanek, 2012).

According to Lefebvre, the Modern Movement had been instrumentalized in the project of capitalist modernization and bureaucratic reorganization of society after the war. The author related the Modern Movement and the consumer society through the notion of *'everyday life'*, a concept developed throughout his career and synthesized in the volume *'La production de l'espace'* (Lefebvre, 1981). It nevertheless remains an elusive concept with different interpretations.

The concept of *'programmed everydayness'* encompassed a whole range of ideological instruments (such as publicity, economic planning, as well as urbanism) targeted to the control and manipulation of the needs and desires of the population. According to this view, neocapitalism prevailed as a *'bureaucratic society of controlled consumption'*, where all planes of existence remained trapped in a *'mirage of wellness'*, or the repetition of lifestyles imposed by the ruling classes (Martínez, 2013). In the words of Lefebvre, *'everyday life can be defined as a set of functions that join and relate systems that may seem separated. Defined in this way, everydayness is a product, the most general of all products in an era when production engenders consumption and when consumption is manipulated by the producers: not by the 'workers', but by the managers and owners of the means of production. [...] Everyday life is, therefore, the most universal and the most unique condition, the most social and the most individual, the most obvious and the most hidden. A condition stipulated by the readability of forms, organized through functions, registered in structures; everydayness is the platform onto which the bureaucratic society of controlled consumption is erected'* (Lefebvre, 1981).

At the same time, the exploration of everyday situations as a social practice allowed for their intervention and reorganization, and thus opened up the door to their emancipation from this orchestrated manipulation. This aspect would be explored in the work of Constant and the Situationist International, with whom Lefebvre was related. To conclude, everydayness according to Lefebvre was a concept based on the simultaneity of two opposing paradigms: the forces that repressed the individual and the power of the individual to break free from them. As the author himself wrote, everydayness was *'hope and truth, power and powerlessness; the intersection of the sector controlled by man and the sector beyond his control'* (Lefebvre, 1981).

1 See 'The Instrumentalization of the Modern Movement in the Construction of Everyday Life' in Hypothesis A, Chapter 1, Volume 01.

21.5 'DUAL CITIES': A FEATURE OF COLONIAL URBANISM THAT INFLUENCED THE DEVELOPMENTAL PERIOD

The desire to modernize and leave behind the baggage of tradition has been Korean society's main objective during the twentieth century (Jung, 2013, p. 1). Because this modernization was initially imposed by the Japanese colonial powers when they annexed Korea in 1910, two antithetical understandings of modernization took hold. One, modern ideals were seen as an opportunity to emancipate from long-standing living conditions. The other, because modern techniques and knowledge were used by the Japanese imperialist apparatus to subjugate and exploit the country, these ideals were rejected. The antagonism between these two ways of perceiving modernization gave rise to a series of Manichean conflicts: westernization vs. tradition, imperialism vs. nationalism, modernization vs. stagnation, exploitation and loss of sovereignty vs. better living standards. This dualistic view of modernization and the search for self-identity is typical of post-colonial societies, where modernization was imposed from without (Jung, 2013, p. 1). The modern paradigm is seen as an oppressive weapon in the hands of the foreign colonial powers, yet also as a tool to guarantee sovereignty from them. In South Korea, modernity has been understood and used as a form of national legitimization in the face of foreign oppressors.

Abu-Lughod's concept of 'dual cities' as one of the most distinctive features of colonial urbanism has been introduced already in Chapter 8, Volume 01[2]. In portraying Cairo, the American sociologist described how the colonial city was a result of new, westernizing methods being overlapped onto indigenous traditions, producing in fact not a unified urban reality but two *'physically juxtaposed but architecturally and socially distinct'* cities (Abu-Lughod, 1971).

In Seoul, this duality between the traditional, autochthonous city and an imposed, modern one can still be found in the literal superimposition of modern road networks and infrastructure onto the traditional urban fabric by the Japanese rulers. But beyond its direct physical outcomes, the precedent of colonial urbanism also favored an understanding of city-making as a dialectic antagonism between a traditional, organic, compact, unhealthy, pathological and dysfunctional pre-existence firmly rooted in the atavistic past, and a rational, functional, hygienic, competitive, global modern city[3]. This urban dualism has many parallels with the propaganda-like discourse on the Functional City and the Charte d'Athènes, as typified in the book *'Can Our Cities Survive?'* by Josep Lluís Sert.

The survival of the dual city in Seoul today is due to the Japanese colonial period (1910-1945), but also to the adoption of colonial planning strategies by the developmentalist state during the years of the 'Economic Miracle' (1961-1997). Because of the forced industrialization and modernization by the state, developmentalism could therefore be considered a form of internal colonization, similar to the role of Meiji-era Japan during the late nineteenth century.

2 See '8.4 Street Grids as Frameworks for Urban Development' in Chapter 8, Volume 01.

3 See Figure 5-7, Chapter 5, Volume 01.

21.6 CONCLUSIONS: THE APARTMENT UNIT AS A POLITICAL INSTRUMENT

At the beginning of the twentieth century, European and North American cities experienced unprecedented demographic pressures due to industrialization, and a new urban culture of the large city – or metropolis – emerged. The provision of housing required by these new metropolises could not be addressed only with piecemeal interventions, and a shift of scale occurred in city making – from building one house at a time to the building of whole sectors. This gave birth to the urban project as a scale in between architecture and planning, and mass housing became one of the main foundations of modern architecture.

Following the propagandistic aspirations of CIAM, efforts to simplify the diversity of modern architecture into a unified, formal style consolidated in urbanism under the Functional City model. Based on Taylorist principles, it was a planning system aimed to solve the chaos of the nineteenth century industrial city, based on the segregation of the city according to the four basic functions of residence, work, leisure and transportation. This vision ignored pre-existences, either natural or man-made, and was aimed towards providing universal solutions that could be applied anywhere.

The universalization of the modern movement as a style and the need of models for the urban reconstruction facilitated its instrumentalization by the systems of power and control in the post-World War II project of capitalist modernization and bureaucratic reorganization of society. Lefebvre called this project 'bureaucratic society of controlled consumption'; and its systems of control, including modern architecture and urbanism, 'everydayness'.

The post-war reconstruction efforts soon made evident the limitations of the Functional City in addressing the urban realities of the second half of the twentieth century. Different voices argued not for the elimination of the model, but for the need to complement it dialectically with a different sensibility that would take into account social, cultural, historical, geographical, ethnical and climate differences. This sensibility was developed around the notion of 'habitat'. Lefebvre's concept of 'everydayness' was also based on the simultaneity of two opposing paradigms: top-down systems of control were balanced out with the possibility of emancipation from them through the exploration of everyday situations as social practices. According to the Vladimir Bodiansky, one of the members of the Team 10, the role of architects was, then, to mediate the dialectic tensions between the opposing paradigms (Bodiansky, 1953).

Mass housing has particularly embodied the tensions inherent in the modern movement between an aspiration to universal solutions and the complexity of local implementations and the desires of the individual. In South Korea, modernization was imposed in a top-down manner, initially by the Japanese colonial powers and later by the authoritarian regime. Thus, modernity was seen as an instrument of foreign domination, but at the same time as a means to oppose it and achieve national sovereignty during the Cold War period. The developmental administration adopted modernization as the state ideology in order to legitimize the dictatorship and imposed it as a revolution from above. Due to a particular combination of circumstances – the post-colonial legacy, the authoritarian regime, the context of Cold War and the competition with North Korea, and the post-war assistance by western powers – developmental policies became an extreme implementation of the notion of 'everydayness'. They featured characteristics from Lefebvre's bureaucratic society of controlled consumption, from the manipulation of the needs and desires of the population through social engineering processes, and from the instrumentalization of the Modern Movement by an alliance of market and power.

Colonial cities feature a morphological duality: the original, traditional city is subordinated to modern, westernizing urban structures and technologies aimed to control and extract resources from it. The developmental regime in its forced modernization project adopted the urban duality and the approach to city-making as a productive endeavor from colonial urbanism, in what could be seen as a process of self-colonization.

Since the construction of the Mapo apartments in 1962, mass housing became a technology through which the state envisioned not only its modern urban setting, but also the lifestyle of the new type of citizen that would inhabit it: the middle class. Through the machinery of the Korean Housing Corporation (KHC) and by way of the standardized unit layout, the Korean state introduced a new domestic paradigm that would shape the modern family and at the same time transform it into an economic unit and a supporter of the regime. Domestic architecture was used, again, as a political tool and it became a key player in the construction of everydayness in South Korea.

Each one of the two following chapters expands on a different side of the domestic controversy. Chapter 22 describes the process of formation of the standardized apartment unit, and Chapter 23 looks at the ways in which users have interpreted those standards in order to adapt them to their own needs.

". . . the daily routine can be briefly delineated: he [the typical tenant] *must, at least according to the all-important architect, go to bed facing the east, eat and answer mother's letter facing the west, indeed, the house will be so organized that he is unable to do it any other way."*

Quote by Adolf Behne (1930) In S. R. Henderson (Ed.), 'Rationalization Takes Command: Zeilenbau and the Politics of CIAM', excerpt from: *Building Culture: Ernst May and the New Frankfurt Initiative, 1926-1931*.

"The family is an instrument of the ideological apparatus of the state."

Frederich Engels (1884) *The Origin of the Family, Private Property and the State.*

CHAPTER 22
REGULATORY STRATEGIES: THE STANDARDIZATION OF DOMESTIC SPACE

This chapter describes the formation of the nLDK apartment layout through the efforts of the Korean Housing Corporation (KHC). The standardized housing unit would become the new domestic paradigm that not only defined the modern lifestyle of middle class families, but actually shaped those families.

It starts by framing the relationship between modern architecture and the controlling aspirations of the modern nation estate. Afterwards, the specificities of the adoption of modern planning and architecture principles in Korea through the Japanese colonial efforts are introduced, together with the role of the colonial authorities as interpreters and enforcers of those principles. A description of the social engineering project of the South Korean developmental estate follows, focusing on descriptions of the ideal middle class family and the relationship of those ideals with housing.

The second part of the chapter takes a more disciplinary approach by looking closely at how the KHC publicized modern urban lifestyles by publishing its own magazine, the '주택 (*chutaek*) House & Home'. Finally, a selection of precedents of the Korean nLDK model leads to the final part of the chapter, where a timeline of case studies of apartment layouts shows graphically the evolution of the typology in order to highlight its features.

22.1 MODERN ARCHITECTURE AND URBANISM AS MECHANISMS OF CONTROL OF THE MODERN STATE

The emergence of the system of modern states in nineteenth-century Europe was built upon power equilibriums between clearly defined, centrally controlled independent political entities, which mutually recognized each other's sovereignty and their respective territories. To compete in this new political situation, the centralist states of Europe had to be more efficient than the great empires of the *ancien régime.* This efficiency would require them to have a more precise idea of the society, physical context and natural resources they would have to govern. Society and the environment were simplified, abstracted and standardized to make them more legible, which also made them more governable in terms of the state's needs. It was during this period that modern bureaucracy, modern monetary systems and central banks were created; general and legal language were standardized; modern urban planning emerged; transportatio and the armed forces were rationalized; surname conventions were standardized for land registers and censuses; and standard weights and measures were adopted. The ultimate goal was to simplify the traditional administrative tasks of taxation, recruitment and prevention of uprisings. James C. Scott has referred to this drive to simplify society and make it more legible, enabling it to be measured, understood, controlled and manipulated as an aspiration for a *'synoptic view'*[1] (Scott, 1998, p. 11).

1 From the Greek *sunopsis*, formed by *sun-* (with, together) and *-opsis* (vision, appearance): meaning "general view", "overview" or "summary".

According to Scott, this simplification, abstraction and standardization of society not only reflected reality, but enabled that reality to be recreated to suit the administration. The value the discipline of mapping acquired in the nineteenth century was not only due to its capacity to make populations and territories legible to the centralist states, but also to its potential in redrawing those realities to better suit governance needs. The procedures to standardize and simplify bureaucracy initiated by the creation of the modern state became the precursors of the standardization and globalization brought about by the laws of the free market.

Michel Foucault's 1975 book *'Discipline and Punish: The Birth of the Prison'* analyses the evolution of social-control mechanisms. In it, the French philosopher described changes to the criminal justice system between the 18th and 19th centuries due to the transition from the *ancien régime* to the modern era and stressed the role of visibility in the modern exercise of power: *'The exercise of discipline presupposes a mechanism that coerces by means of observation'* (Foucault, 1995, p. 170). For Foucault, one of the main techniques for exercising discipline was the art of distributing individuals in space through easy-to-control enclosures, eliminating public space as a meeting place, zoning space according to different functions, and establishing hierarchical networks. Examples of this form of spatial discipline through the synoptic view included military barracks, workers' accommodation, hospitals, prisons and schools. The organizational resource *par excellence* in the eighteenth century was the orthogonal grid, especially in politics, science and economics, thanks to its dual role as a knowledge tool and an instrument of power. The two axes enabled both legibility and supervision (or distribution and analysis) at the same time, since each element could be compared by observing its position with respect to the others. Jeremy Bentham's Panopticon penitentiary (designed in the late eighteenth century) was the spatial model not only of prison buildings, but also of the modern organization of society in general, which could be understood as a disciplinary society. The disciplination of society led to its militarization.

The emergence of modern states took place at the same time as the Industrial Revolution in Europe and the United States, which drove unprecedented progress in science, technology and industry. At the end of what is known as the Second Industrial Revolution (late nineteenth century), the American engineer Frederick W. Taylor introduced a series of measures to optimize industrial production through the rational management of the work process. This way of thinking became known as Taylorism or scientific management. It involved a desire to improve economic efficiency and labor productivity through analysis and synthesis, empiricism, work ethic, waste efficiency and reduction, standardization, criticism of unfounded tradition, transformation of craft production into mass production, and knowledge transfer among workers and from workers to tools, processes and documentation (Taylor, 1911).

Taylorism was the start of a long-standing school of thought – which later included Fordism – that aimed to optimize work methods. This school of thought not only had economic repercussions, but also social and political ones. Demand for precise, rapid production and a worker shortage during World War I allowed the system to become widespread throughout Europe. The need for urban reconstruction after the war and the social crisis caused by the widespread housing shortage consolidated the system's position, especially in 1920s Germany and France.

This way of thinking greatly influenced the architecture and urban planning of that period, an influence that was boosted by the emergence of CIAM in 1928 and the opportunity for it to be implemented as part of the reconstruction effort after World War II. Specifically, the influences of Taylorism on the Modern Movement can be traced to the adoption of zoning as the main planning tool (related to the division of labor); the specialization of traffic; the standardization of building and prefabrication processes; the predominance of industrial construction over craft production; the rationalization of construction processes; the optimization of spatial use by defining minimum units and rationalizing bathroom and kitchen spaces; etc. This production model and

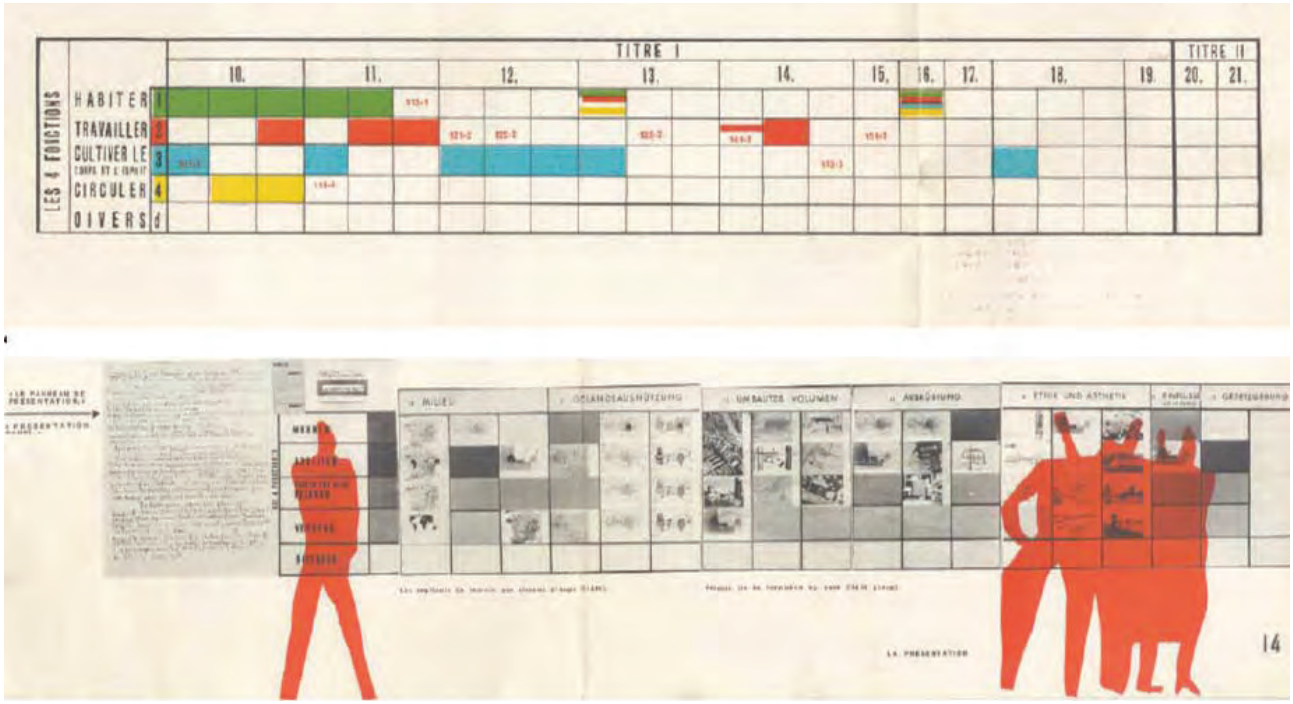


Figure 22-1. Example of the CIAM grid.
Source: *L'Architecture d'Aujourd'Hui*, 1948.

its products had a huge impact on such a highly influential figure as Le Corbusier, as evidenced in the urban utopias described in his *'Ville Contemporaine'* and *'Plan Voisin'* projects, and in his view of mass housing as a 'machine for living in' (*machine à habiter*), as well as the fascination for modern industrial aesthetics in aero planes, ocean liners and American agricultural buildings.

> *"Through the airplane and the camera we have acquired a complete and precise view of our cities from above. Air views have revealed to man a new "urban facade", a perspective which has never before been known."*
>
> (Sert, 1944)

One example of this aspiration for a *'synoptic view'* was the introduction at CIAM 7 in Bergamo (1949) of a system for graphically organizing the information contained in the projects presented during the congresses. To prevent mountains of written reports from piling up, Le Corbusier proposed organizing information visually in a grid with different categories arranged into 21 x 33 cm panels. On the horizontal axis were the different categories: context, constructed volume, ethics, aesthetics, social and economic influences, legislation and finance. On the vertical axis were the four urban functions of the Charte d'Athènes, which were color-coded: housing (green), work (red), leisure (blue) and mobility (yellow). For Le Corbusier, organizing the information through the intersection of the two axes provided a *'tool for thought'*, which would make the information easier to understand and easier to compare with other projects[2].

Modern urban planning began to emerge in the West in the late eighteenth century, a period that witnessed rapid colonial expansion, growing industrialization, the rise of a new world order and the emergence of modern nation-states. Several new ways of understanding the city emerged: the English garden cities, the zoning of the Ruhr area, Arturo Soria's *Linear City*, Cerdà's *General Theory of Urbanization,* Haussmann's urban renewal work in Paris, etc. In its attempts to react to a series of changes that were affecting the built environment, the nascent form of urban planning had several overall objectives:

- To make the city **healthier:** as a legacy of hygiene concerns by nineteenth century reformist movements, and in order to provide a solution to the unsanitary conditions brought about by population growth and industrialization, wastewater and drinking water infrastructure were built, open spaces were created, etc.
- To make the city **more productive**: communications, freight transport, access, and the spatial distribution among the different parts of the city were all optimized.
- To make a **fairer** city: as a legacy of the utopian school of thought (Fourier, Owen, etc.), in order to bring about the provision of goods and services for all, thus reducing social inequalities.
- To make the city **more governable**: society's systems of organization were rationalized, simplified and made legible in order to optimize the basic functions of the state: population and resource management and control, (postal address system, town-hall registration, tax map, plots map, etc.) and the suppression of insurgencies.

Marion von Osten has explained how the spatial organization introduced in modern urbanism sought both to offer shelter to the population and, at the same time, to control, mobilize and exploit this very population and its territory to meet the new needs of modern states, as described earlier. Colonized territories became laboratories for architects and modern urban planners, who saw the colonies as a *tabula rasa* on which to experiment with building a new society. The author claims that modern urban planning has always been linked to colonialism and imperialism, and that new practices and concepts move not only from the West to the colonies, but also from the colonies to the West (von Osten, 2009).

2 See Figure 22-1 on page 313.

22.2 COLONIALISM AND THE DIFFUSION OF MODERN URBAN MODELS IN KOREA

Modern planning and architecture arrived to Korea through the Japanese colonial machinery, as a means to ensure military control, support an incipient industrialization and optimize the extraction of resources. Japan had been developing its modern planning since the Meiji restoration (1868), initially as a mixture of local traditions and foreign concepts through a process of trial and error. Japanese planners were not only importing modern planning concepts, but they were also developing and experimenting them in the Asian colonies, where they could implement them through military power. Through the authoritarian imposition of Western-based developing planning practices in Taiwan, Korea, China and Manchuria, Japan acted as a transformer and interpreter along the way. The transmission of this Western expertise was not always strictly true to the originals, for either the Japanese experts could easily misunderstand the original concepts, or the foreign experts hired to bring this knowledge would not be able to gauge its appropriateness to the Japanese context. Based on the specificities of Japanese cities (need for rapid growth or reconstruction, compromised land ownership, etc.) and society (lack of tradition of large-scale urban plans, no tradition of integration of architecture and urban design, weak civil society), the planning discipline developed differently than in Western countries. It became controlled by bureaucrats within the central administration, focusing on pragmatic planning without ideology, based on tools and specific projects rather than on large-scale, comprehensive visions. That is why the Japanese importation of Western techniques and concepts and its adaptation to Japan and East Asia became very attractive for other Asian countries (Hein, 2003). This technocratic approach to planning, the disciplinary split between urbanism and the architectural profession, and the import of Western models and techniques devoid of ideology became the norm during the emergence of mass housing during the developmental period in South Korea.

22.3 SHAPING THE MODERN SOUTH KOREAN FAMILY: POPULATION POLICIES DURING THE DEVELOPMENTAL PERIOD

The modernizing efforts of the developmental regime during the 1960s, 1970s and 1980s did not only have a direct impact on the built environment and on the housing preferences of the population, but also on the demographic condition of society itself, through population policies linked to economic development plans that were very successful in changing the size and composition of households. The project to standardize the modern family was tied to the reliance on the family as a basic socio-economic unit in productivist welfare systems under developmental economies in East Asia, to the development of a new urban middle class, and to the emergence of a consumer society[3]. The sociological implications of this process are beyond the scope of the research, but the fact that these population policies were implemented alongside the introduction of mass housing policies is worth a brief introduction, which will be based on a selection of existing literature on the topic.

After the socio-political turmoil related to the Japanese colonization, World War II and the Korean War (1950-53), South Korean population grew at a strong pace between 1955 and 1966. The first official census of the Republic was taken in 1949 and it estimated a population of 20,188,641. In 1955, right after the Korean War, the population was estimated at 21.5 million, which meant a slow growth of about 1.1% annually for the period. But in the period of relative stability between 1955 and 1966, population increased to 29.2 million, averaging a 2.8% annual growth. The period between 1955 and 1960 showed a particularly strong growth rate that came to an end by 1961. Since then a sharp decline ensued, with an average of 1.7% growth between 1966 and 1985, and an average of less than 1% thereafter, similar to most contemporary industrialized countries[4].

3 As exposed in '1.3.2 Qualitative Aspects - Private Management of the Implementation Compared to Other East Asian, Developmental Counterparts', in Chapter 1, Volume 01; and '2.3 Housing the East Asian Miracle: Developmental Housing Policies' in Chapter 2, Volume 01.

4 See Figure 22-2 on page 317.

The proportion of children evolved in parallel to the growth rate. While in 1966 about 43.5% of the population was younger than fifteen years old, the percentage decreased to 38.3% in 1975, 34.2% in 1980, and to 29.9% in 1985 (Seekins, 1992, pp. 77-78).

What were the reasons for the abrupt shift since 1960-61? Economic growth had a definite impact on the decline of the growth rate and on the proportion of population under age fifteen (due to urbanization, later marriage ages, higher education levels, improved health standards, a larger number of women in the labor force, etc.); but those sharp demographic changes would not have been achieved without the successful implementation of a population policy (Chang, 1993, p. 47). While the government of the First Republic under President Syngman Rhee (1948–60) had been conservative on those matters, family planning programs were widely adopted across the country under the new regime of President Park Chung-hee (1961). The new administration implemented a comprehensive plan for national economic development, taking into account population growth, economic development, resource consumption, environmental deterioration and other factors. Development planners realized that a rapidly increasing population would undermine economic growth. Since the most important goal was to eliminate poverty in the country by raising per capita income, controlling demographic growth became a priority. Thus, the Supreme Council for National Reconstruction (대한민국국가재건최고회의) adopted a population control policy at its steering committee in 1961. Since then, fertility control programs became an integral part of economic development plans.

Public and private institutions involved in family planning included the Ministry of Health and Social Affairs (MOHSA - 보건사회부), the Ministry of Home Affairs, the Planned Parenthood Federation of Korea (PPFK - 대한가족계획협회), the Korea Institute of Family Planning (한국 가족 계획 연구소), and the Korean Association for Voluntary Sterilization (Seekins, 1992, pp. 77-78).

As Seung-sook Moon described,

> *"The modernizing state had to launch aggressive propaganda for family planning because the idea of contraception was foreign to most Koreans, who tended to believe that having many children meant good luck and that every child would bring his or her own food into the world….*
>
> *….The state…worked closely with the PPFK to change the public perception of birth control, establishing a department of public relations in 1970 to make the idea and practice of contraception familiar to the populace. The PPFK increasingly relied on mass media (radio, television, newspapers, magazines and education texts of its own) to disseminate positive images and information about families with a small number of children. To encourage popular participation, the PPFK organized popular contests of various kinds, ranging from posters, songs, and slogans to stories of personal experiences by mothers and wives concerning contraception."* (Moon, 2005, pp. 81-82)

The different policies implemented were, by decade:

1960s

- '3.3.35 policy': implemented by the government, it recommended parents to have a maximum of three children, in three-year intervals, and only up until they were thirty-five years old.
- The five-member households became the norm.
- Public hospitals offered free sterilization procedures.
- Free intrauterine device (IUD) insertion.
- Establishment of family planning programs and education centres.
- Slogans: *"Did you know that the most effective, safest, and simplest device is the loop (IUD)? People who want one please go to a welfare or family planning centre."*

(See Figure 22-3)

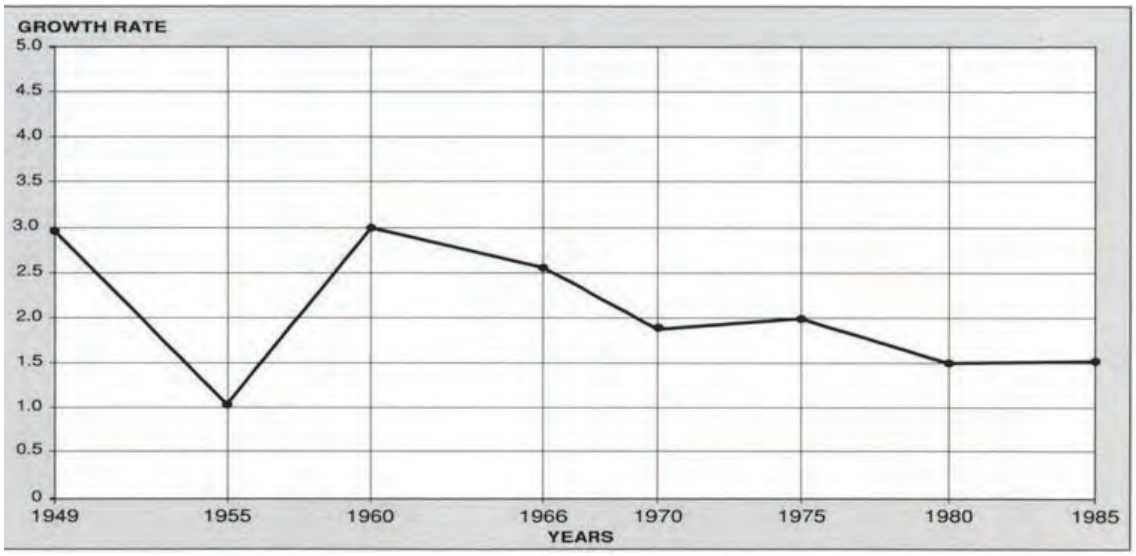


Figure 22-2. South Korean population growth rate, 1949-85.
From (Seekins, 1992, p. 80), based on information on the Korea Institute for Population and Health (December 1988), and the National Bureau of Statistics (August 1988).

Figure 22-3. Poster - calenders by the Ministry of Health and Social Affairs (MOHSA) & the Planned Parenthood Federation of Korea (PPFK) in 1968 and 1970.
Both read: *"Did you know that the most effective, safest, and simplest device is the loop (IUD)? People who want one, please go to a welfare or family planning center."*
The black headline on the left edge of the right calendar reads: *"Let's have the proper number of babies, and raise them well!"* (Source: Learning from Korean Family Planning Advertisements, 1960s-1980s. (2012). Retrieved from http://thegrandnarrative.com/2012/02/16/korean-family-planning/)

1970s

- The Confucian value system in South Korea favored sons, as they were expected to take care of the elder parents and to carry on the family name. This tradition posed a challenge for family planning policies, as parents with only daughters would continue to have children until a son was born. During the 1970s, the government encouraged married couples to have a maximum of two children, and to not distinguish between boys or girls but to focus instead on providing a higher quality of upbringing (Seekins, 1992, p. 79).
- The four-member family became the norm.
- In 1973, the Maternal and Child Health Law legalized abortion.
- Slogans: *"Don't discriminate between boys and girls, have only two children and raise them well"*. *"Sons or daughters, let's have two children and raise them well."*

(Figure 22-4)

1980s

- In face of negative economic growth for the first time since 1962, together with a reduction of volunteers for sterilization, the government issued new policies to control population growth. It encouraged married couples to have only one child.
- The three-member family became the norm.
- In 1983 the government began suspending medical insurance benefits for maternal care for pregnant women with three or more children. It also denied tax deductions for education expenses to parents with two or more children (Seekins, 1992, p. 79).
- Since the late 1980s, special subsidies and privileges were granted (such as low-interest housing loans) to parents who agreed to undergo sterilization (Seekins, 1992, p. 79).
- Slogans: *"Have a single child and raise it well"*. *"Two children is many too!"*. *"One family, full of love. One child, full of health"*. *"Raise one daughter well, and you won't envy (those who have) ten sons"*.

(See Figure 22-5, Figure 22-6, and Figure 22-7)

1990s

- In spite of below replacement total fertility rates (TFR – number of children per woman), no major changes were introduced to population policies during the 1990s.
- After the aggressive policies of the 1960s, 1970s and 1980s, the TFR went from 6.33 in the 1955-60 period; to 4.71 in 1965-70; 2.92 in 1975-80; 1.60 in 1985-90; 1.51 in 1995-2000; and 1.29 in 2005-10 (United Nations Department of Economic and Social Affairs (DESA), 2011).

2000s

- Between 2005 and 2010, the TFR for South Korean women plunged to 1.21, one of the lowest in the world and well below the replacement level of 2.1 births. This raised nationwide concerns in regards to the sustainability of its ageing population and the mid-term economic effects.
- In 2005, a basic legal framework for a new proto-natalist policy was set in place, including tax incentives, priority for the purchase of a new apartment, support for child care and education, assistance to infertile couples, and others (Haub, 2010).
- The Vision 2020 Plan was launched in 2006 in order to raise fertility. The goal was to reach a 1.6 TFR by 2020, a ration which is the average for OECD countries but still below the replacement rate (Haub, 2010).
- The four-member family became the norm again.
- Slogans: *"Mother, father: I don't want to be alone. I want a brother/sister too"*. *"The best present for your child is a baby brother/daughter."*

Figure 22-4. Posters by the Ministry of Health and Social Affairs (MOHSA) & the Planned Parenthood Federation of Korea (PPFK), 1974.
Both read: *"Don't discriminate between boys and girls, have only two children and raise them well."*
The black text on the umbrella on the left poster reads: *"The path to youth and beauty is family planning."*
Source: Learning from Korean Family Planning Advertisements, 1960s-1980s. (2012). Retrieved from http://thegrandnarrative.com/2012/02/16/korean-family-planning/

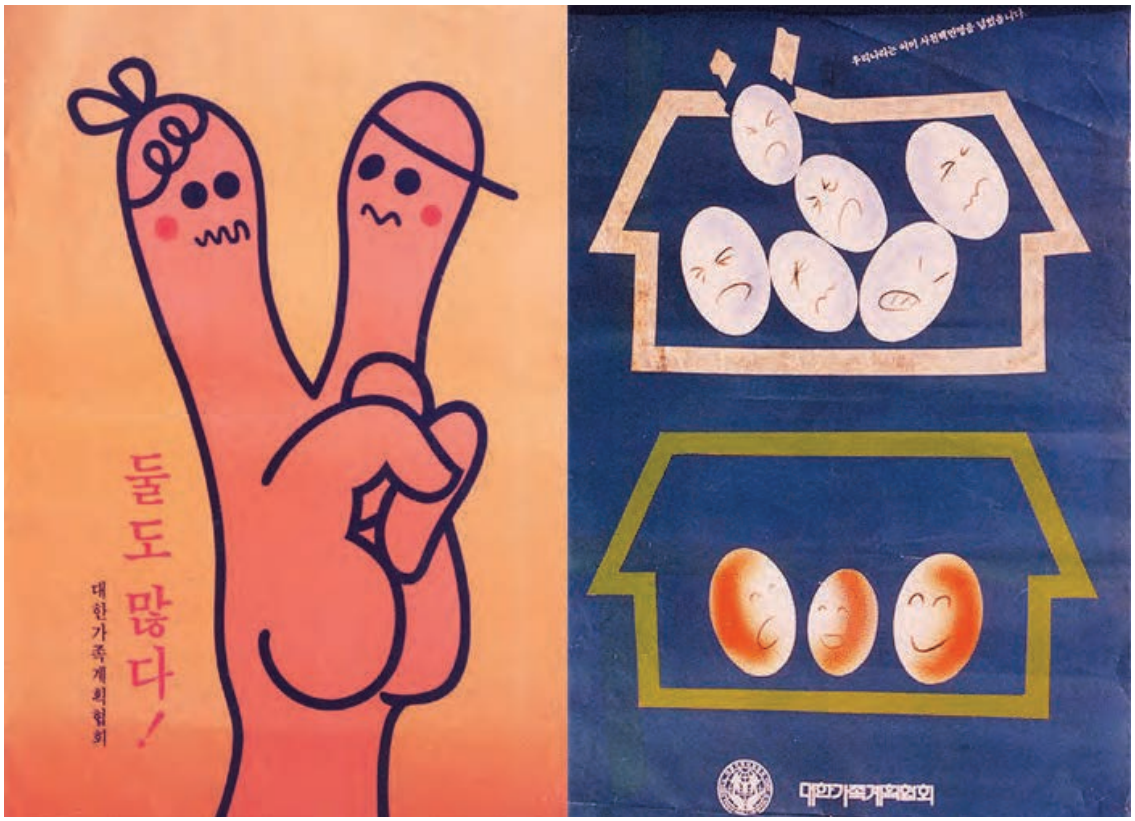


Figure 22-5. Posters by the Planned Parenthood Federation of Korea (PPFK), 1980s.
Left: "Two children is many too!". Right: "Korea's population has already exceeded 40 million".
Source: Learning from Korean Family Planning Advertisements, 1960s-1980s. (2012). Retrieved from http://thegrandnarrative.com/2012/02/16/korean-family-planning/

Overall, the diverse incentives of adopting family planning measures were:

- Priority of access to public housing (입주 우선권).
- Priority to get housing and business loans (복지주택부금).
- Government subsidies for poor families joining family planning programs.
- Free care at public hospitals for children whose parents underwent sterilization.

While the threats for not doing so:

- Threat of becoming poor for families not adopting birth-control measures.
- Suspension of medical insurance for maternal care to pregnant women with three or more children (since 1983).
- Denegation of tax deductions for education expenses to parents with more than two children (since 1983).

The success of these population policies prompted the unsustainability of the present demographic situation[5]. Between 1960 and 1990, about 4 million sterilizations were carried out, 7 million IUD's were fitted, 130 thousand boxes of preservatives were supplied monthly, and seventy thousand cycles of oral contraceptives were consumed every month (Chang, 1993, pp. 51-52). It has been estimated that, only between 1982 and 1987, over 2 million women were sterilized, in what Moon has called a *'semiforced mass sterilization'* (Moon, 2005, p. 85). Also, according to Mara Hvistendahl, *'at one point, a quarter of the country's health budget was going on population control and the number of abortions hit an all-time record in Seoul, where, in 1977, there were 2.75 abortions for every live birth'* (Hvistendahl, 2011). Reflecting upon the manipulation of women and their fertility within the instrumentalist framework of family planning policy, Seun-sook Moon has written: *'the modernizing state reveals that it cannot maintain its calculated policy of population control without fertile mothers and wives willing to use certain forms of contraception as 'patriotic' forms of family planning'* (Moon, 2005, p. 88).

Besides addressing the same broader goal of shaping population in connection to economic development plans, population policies were also directly related to mass housing policies, since access to new apartments and to housing loans were offered as an incentive for adopting family planning procedures.

5 As mentioned in the definition of the period of study in 1.5.2, Chapter 01, Volume 01.

Figure 22-6. Posters by the Planned Parenthood Federation of Korea (PPFK), 1980s.
Left: *"Even if you only have one child, Korea is overflowing"*. Right: *"Korea is already overflowing"*.
Source: Learning from Korean Family Planning Advertisements, 1960s-1980s. (2012). Retrieved from http://thegrandnarrative.com/2012/02/16/korean-family-planning/

Figure 22-7. Posters by the Planned Parenthood Federation of Korea (PPFK), 1980s.
Left: *"One family, full of love. One child, full of health"*. Right headline: *"Because of one son"*. Text below: *"Overpopulation is everybody's responsibility"*.
Source: Learning from Korean Family Planning Advertisements, 1960s-1980s. (2012). Retrieved from http://thegrandnarrative.com/2012/02/16/korean-family-planning/

22.4 THE ROLE OF THE 주택 (CHUTAEK) MAGAZINE IN DEFINING THE MODERN APARTMENT UNIT LAYOUT

This subchapter focuses on the role of the Korean Housing Corporation in defining a modern apartment type in correspondence to the introduction of new lifestyles through the publication of a periodical magazine, *'Chutaek'* (주택) (Korean Housing Corporation, 1959-1980)[6].

1. Introduction to the '주택 (chutaek) House & Home' magazine.

Influenced by the establishment of the Japan Housing Corporation in 1941, the Chosun Housing Corporation (조선 주택 공사) was founded in the same year as a public company in order to deal with housing problems for Japanese living in Korea. During the initial four years of its creation and because of the scarcity of building materials due to World War II, the Corporation struggled to provide housing where is was most needed – Gyeongseong (Seoul under Japanese rule), Pyeongyang and Cheongjin. In order to do so, it adopted industrialized construction methods and standardized housing designs. It was in this need for efficiency in order to cater to the needs of Japanese nationals living in Korea that the Corporation became a precedent for the rationalization of housing construction and for the introduction of foreign lifestyles (Yun, 2003, pp. 233-237).

After the War and the establishment of the Republic in 1948, the corporation was renamed to Dahean Housing Corporation (대한주택공사). During the post-World War II period and all the way to the end of the Korean War (1950-53), housing conditions only worsened due to the destruction of stock during the conflict, the influx of refugees, the construction of informal settlements, and the lack of resources[7]. The chronic lack of housing was referred to as 'the housing problem' by the first president of the Republic, Seungman Rhee, who stated that it was worse than the food shortage (Yun, 2003, p. 242). The situation drew strong parallelisms with the housing crisis in the industrialized countries of Europe during the 1920s, which prompted the development of modern mass housing through initiatives such as das Neue Frankfurt, events such as the CIAM 2 Congress (1929), building societies such as the GEHAG (*Gemeinnutzige-Heimsatten-Spar-und-Bau*, 'profit-homes-saving and construction') in Berlin, or models such as the *Gemeindebau* ('community construction') buildings in Vienna.

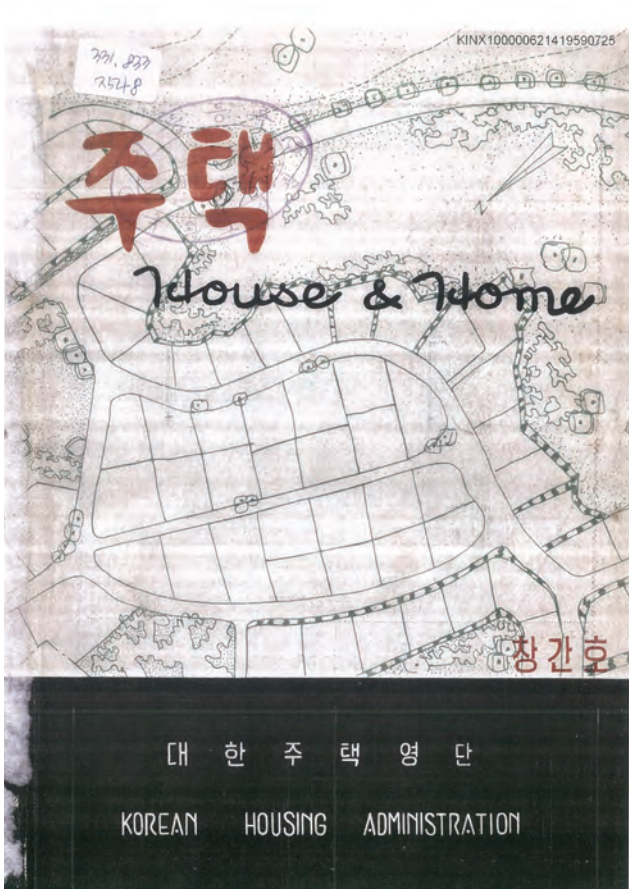
Once the political situation began to settle, by 1955 the Dahean Housing Corporation engaged in the construction of provisional public housing with foreign funding through the UNKRA (United Nations Korean Reconstruction Agency). The public housing projects of the 1950s were mostly based on single storey, low-density, detached or semi-detached types that could not by any means cope with the housing shortage at the time, but became important precedents for a variety of reasons (Yun, 2003, p. 244):

- They spear-headed the construction of mass housing, and opened the door for private developers to build market oriented housing (known as 'spec houses').
- They introduced modern, western living lifestyles and amenities such as the modern kitchen and bath, the separation of living and sleeping quarters, the living room as a common space and the use of Western furniture instead of seating on the floor, among others;
- They initiated the development of the suburban areas of the capital.

In order to introduce modern lifestyles to Korean society, the Corporation established a Housing Center in downtown (대한주택공사주택센터), and launched a publication: the '주택 (*chutaek*) House & Home' magazine. The goals of these marketing efforts were diverse: advising families on funding for housing; consulting to the administration on housing policies; introducing modern construction systems, technologies and materials; reviewing housing developments; introducing modern planning examples from abroad; etc. Both the Housing Centre and the magazine were endorsed by

6 See Figure 22-8.

7 See '10.2 A Chronic Housing Shortage in the Twentieth Century', in Chapter 10, Volume 01.



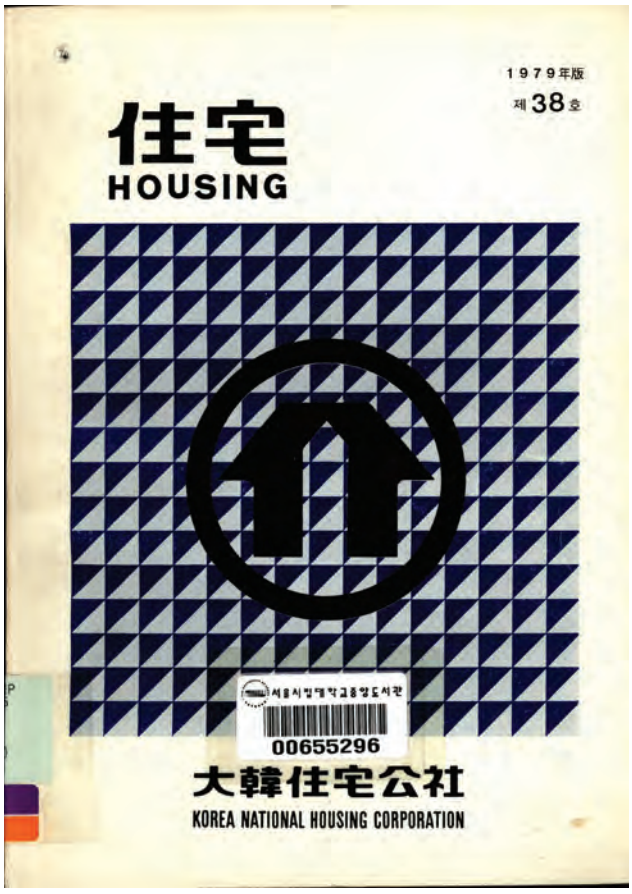


Figure 22-8. Covers of the 주택 (*chutaek*) magazine, volumes #1, 12, 24 & 38.
July 1959, July 1964, December 1969 and January 1980.

Chang Dong-un (장동운), first and fourth President of the Corporation and former colleague of President Park during their time in the army.

The magazine had thirty-eight volumes, published irregularly between 1959 and 1980. It was during that period that a housing revolution took place, as the residential preference of Korean people radically shifted from single-storey houses to apartments. At the end of its run, the magazine had accomplished its goal to push lifestyle reform through showcasing new technologies of living. By 1980, the construction of apartments amounted to the 42% of the housing construction in Seoul per year[8]. This moment also coincided with the gradual transition of the development of mass housing to the private sector. The Housing Promotion Law of 1972 had opened that door, and the Urban Renewal Law of 1976 further facilitated that transition. In 1978 private development reached the 50% of the development of *apat'u tanji* in South Korea, only to increase in the years to come. From that moment, the KHC stepped back from its role as a developer of apartments and adopted instead a lower profile as a facilitator of the process.

The range of topics addressed in the magazine was very broad, reflecting the complexity and importance of 'the housing problem':

- How to address the housing shortage;
- Introduction of new housing types;
- Strategies for housing site planning;
- Financial advice about housing loans;
- Description of foreign case studies on housing policy, site planning and housing types;
- Description of housing regulations and their applications;
- Review of housing projects by the Dahean Housing Corpo¬ration;
- Advice to housewives on house-keeping, maintenance and management of the kitchen and the household;
- Meeting Minutes of meetings on housing organized by the Dahean Housing Corpo¬ration;
- Improvement of traditional Korean houses;
- Introduction of mass housing;
- Discussion of the advantages of high-rise versus low-rise housing;
- Introduction of standardized materials and efficient construction systems;
- Improvement of the construction industry and the housing administration;
- Surveys of housing conditions;
- Approaches for the improvement of informal settlements;
- Introduction of prefabricated construction materials;
- Community planning;
- Design of specific parts of the house: the kitchen, the children's room, the living room, etc.;
- Housing design competitions;
- Introduction of community planning and the neighborhood unit concepts;
- Planning of New Towns;
- Discussion of modern construction pathologies;
- Development of the nLDK typology in South Korea;
- Introduction of Singapore's Housing Development Board (HDB) and Hong Kong's Housing Authority (HA) as references for the KHC.

8 See Figure 4-6 in Chapter 4, Volume 01.

2. Project of modernization of the domestic environment

Over the years, the '주택 (c*hutaek*). House & Home' magazine became a vehicle for the modernization of the Korean domestic environment. This modernizing project went hand in hand with a project for 'urbanizing' the influx of population from the provinces, transforming them into citizens, members of the new urban middle class, and parts of the economic machinery of the 'Miracle on the Han River'[9]. This modernization project, a true 'revolution from above' (Trimberger, 1978) since it was initiated by the developmental regime, was a colonization from within and it involved the gradual absorption of Western ideals into living environments. The magazine itself, by including a mixture of words in Hangeul and English in its title, symbolized this assimilation between modernization and Westernization.

One particular instance of this assimilation that encapsulates the modernizing drive of south Korean society in the second half of the twentieth century was the use of word 문화 (*munhwa* - culture) to refer to a modern and westernized lifestyle. A change in the housing policy in 1957 brought a shift from building provisional public housing to permanent ones, the so-called 'citizen's houses' (*shimin chutaek*, 시민 주택), either as detached houses or as small apartment buildings. They were designed with the intention to improve living standards, and incorporated modern amenities and Western features (Yun, 2003, p. 244). One such development was built in Hongje-dong, in an area formerly occupied by poor families. Attracted by the modern features, many celebrities related to the arts and culture (writers, actors, artists, musicians, professors, journalists, etc.) moved in, prompting the area to be known as 'cultural village' (Yun, 2003, p. 296), and the units as 'cultural houses'. Marketing modern lifestyles by attracting celebrities to move into new housing estates would become a common strategy of the Corporation in the years to come. These modern lifestyles would then spread to the rest of the population in a trickle-down manner. As a result, by embodying modern lifestyles, apartments became symbols of status.

3. The development of a modern apartment type for South Korea

As Klaus Blach, a Danish architect and United Nations building research expert working as a technical advisor for the KHC described in the volume #19 of the magazine in 1967,

> *"The official estimates say that in all about one million dwellings will be needed. If all these dwellings were designed separately, this design job would naturally be colossal –so colossal, that there would not be architects and engineers enough for the job.*
>
> *[…] To build even the first 10% of the one million dwellings needed is so big a job, that the national economy may be influenced. And even if our first aim is to build only a hundred thousand dwellings, the amounts of building materials, man power and money involved are so big, that each time building research can achieve only a one percent saving in these amounts, the total savings will run into rather fantastic figures"* (Blach, 1967).

Based on those premises, the main hypothesis driving the argument of the article –and the activities of the KHC at the time- was the need for efficiency and rationalization in the construction of housing through building research by *"an organization which has been given this special job and staffed with the qualified technicians to do it"* (Blach, 1967). This organization was, of course, the KHC through its own Housing Research Institute (HRI). The article also reads:

> *"It is one million dwellings Korea needs, and if we should have any chance of reaching the goal, then the utmost economy must be used all the way through – which means, that each solution should be designed so as to give the population –and the nation as a whole the best possible living conditions with the smallest possible amount of building materials, man power and money"* (Blach, 1967).

9 See 1.1, Thesis, in Chapter 1, Volume 01.

This implied that cost savings was not the only goal, but also the improvement of living conditions. This dual objective bears a striking resemblance to the purpose of the development of the 'minimum dwelling' (*existenzminimum*) in Europe during the 1920s: a new dwelling type capable of providing maximum livability, together with a minimum of hygienic conditions[10]. The forty year gap between the development of the *existenzminimum* in Europe and the opportunities for their practical implementation during reconstruction after World War II in Europe, the US and Japan meant that there was already a large amount of theoretical and practical expertise from which to borrow and adapt. This borrowing and adaptation are evident in the role of foreign advisors such as Mr. Blach himself, as well as through many of the theories implemented in the development of mass housing in Seoul and published in the magazine[11].

After setting up these premises, the article goes on to state that the answer to the housing shortage is the development of a 'type design':

> *"The answer to this problem of great needs and limited resources is in Korea like in all other countries the idea of the so-called TYPE DESIGN. A type design is not quite the same as a standard, which is usually rather strict and inflexible. A type design for example a house or an apartment can usually be executed in varying sizes, with different combinations of materials and with different levels of quality for installations, finishes, etc. But –and this is all the import point if it is a true type design, then all the variations can be obtained putting the same limited number of elements together in different ways"* (Blach, 1967).

What follows is an analysis of articles from the magazine that focused on the rationalization of the housing industry through typological research, categorized in different topics. The goal is to trace the development of a specifically Korean modern apartment type; to understand the impact of its spatial characteristics on people's lifestyles; to find out what were the models shown as desirable to the population; and ultimately to discern how the magazine contributed to the emergence of a modern domesticity in South Korea. To that end, matters of site planning, housing financing, building management, construction technology or others are not taken into consideration. Samples of the articles, grouped under different categories, are shown in Chapter 20 of Volume 02.

4. Summary of findings in the Chutaek magazine

A conflict evident since the first volumes of the magazine was the choice between two types of urban development in order to address 'the housing problem': on one hand, a low-rise, low-density suburban model based on the Garden City, and on the other hand a high-density model based on collective housing buildings. Since the end of the Korean War (1950-53) the provision of public housing through funding from the UN was based on the first model, but by the end of the 1950s it became evident that it was not a viable solution. The first volumes of the magazine showcased examples of those detached or semi-detached housing solutions, and at the same time included articles calling for the need of denser solutions that would optimize resources and land use. Soon, the apartment building type was chosen as the solution by the KHC.

The main reference in the development of a modern apartment type in Korea was the nLDK system developed by the Japanese Housing Corporation (JHC) in 1951[12]. As we have seen, the original founding of the Korean Housing Corporation as the Chosun Housing Corporation in 1941 under Japanese colonial rule was a direct consequence of the creation of the JHC, and the two governmental corporations remained related after liberation. The Japanese nLDK system offered an already available mass housing solution that incorporated modern features (separation of sleeping and eating quarters, inclusion of modern technologies and appliances, etc.) and was already adapted to the East Asian context. Nev-

10 See '22.5.b Existenzminimum - Minimum Dwelling' later in this chapter.

11 See Figure 22-9 to Figure 22-13 on page 327.

12 See '22.5.e The Japanese nLDK Apartment System' later in this chapter.

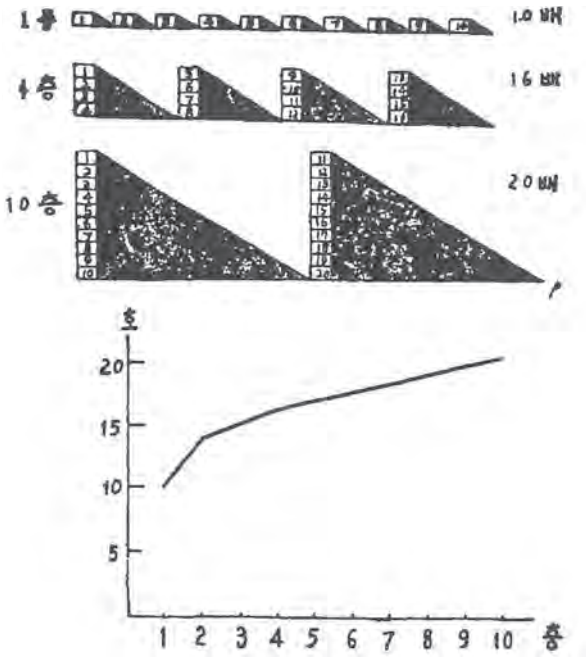


Figure 22-9. Diagram demonstrating the efficiency of low-rise, mid-rise and high-rise apartment buildings in relationship to sunlighting.
From 주택 (*chutaek*) magazine, volume #27, June 1971, pp. 26.

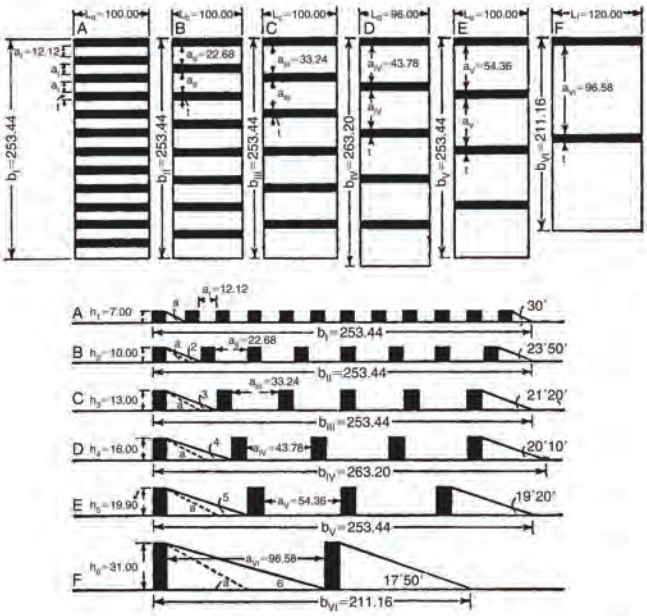


Figure 22-10. Diagram relating the variables of building heights, distance between buildings, sunlight and density, based on a zeilenbau layout.
Walter Gropius, 1929.

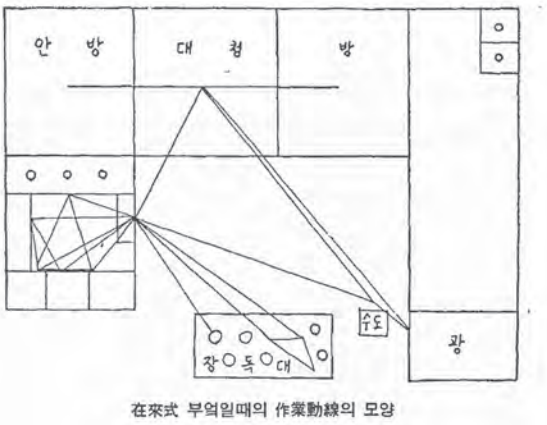


Figure 22-11. Kitchen flow diagram in a traditional Korean house (하녹, *hanok*) .
From 주택 (*chutaek*) magazine, volume #20-21, December 1967, pp. 95-100.

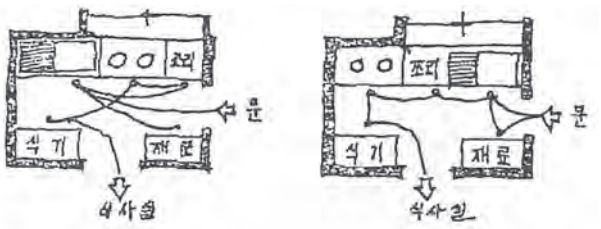


Figure 22-12. Rationalization of the process of food preparation.
From 주택 (*chutaek*) magazine, volume #24, December 1969, p. 77.

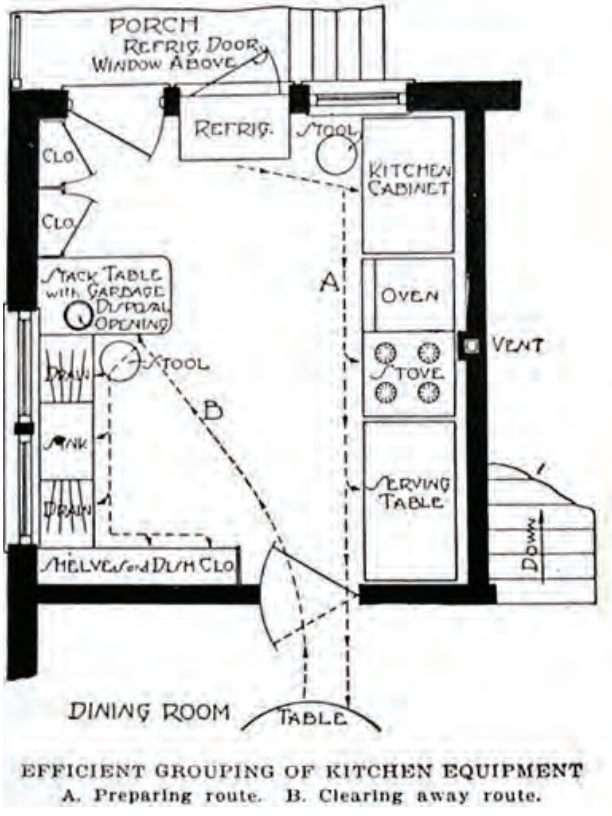


Figure 22-13. Efficient grouping of kitchen equipment.
Ch. Frederick: *'Household Engineering. Scientific Management in the Home'* (1915).

ertheless, it had to be re-adapted, both in terms of the climate (Korean winters are harsher than in Japan, and people were used to underfloor heating, for instance) and culturally (Koreans do not use tatami floors). As a result of this process of adaptation, the use of the term nLDK is absolute common place today in Korea, but the typological implications are very different than in the original Japanese. The development of the Korean nLDK system is one of the most important subjects dealt with in the magazine, and through the years the emergence of a series of defining treats can be traced. Since the development of the nLDK system is the subject of a dedicated portion later in this subchapter, the findings from the Chutaek magazine have been included there[13].

The overall project to rationalize the construction of housing implied that *"every single point and problem be scrutinized. It is not good if the money saved in designing a good dwelling plan layout is squandered on a bad roof design"* (Blach, 1967, p. 39). The functional approach and positivist attitude of the KHC is also made evident in the following passage: *"Through investigations it is naturally possible to find out which functions are to be carried out in a certain room, and also to find out the space which will be necessary to allow that these functions can be carried out in the best way possible"* (Blach, 1967, p. 36). These investigations on the functions of the dwelling and on the spatial needs of those functions implied the normalization of living environments. They followed a long tradition that had been present since the founding of modern architecture, an overreaching process of industrialization, standardization, taylorization and rationalization that took Ford's assembly plants in Detroit as a model for the organization of modern society, especially in the inter-war period[14]. A singular reference for this normalization of living environments was the work of Ernst Neufert, a former student of Gropius at the Bauhaus, also called 'the Taylor of construction'. His book *'Architects' Data'* was first published in 1936 and has since been translated to twenty languages and it is currently in its fortieth edition. The '주택 (*chutaek*). House & Home' magazine published several articles on the functions of the dwelling and on the spatial requirements of those functions, which were basically adaptations of the work of Neufert to Korean traditions. The use of the floor for activities such as sleeping and eating is probably the most notable difference. The normalization of dwelling functions also became a source for the introduction of Western lifestyles, (especially in the use of furniture) and for the specialization of the different spaces of the house. By the time these 'investigations' were being published in Korea in the 1960s, many voices had already been raised in the West against over-simplistic functional approaches to the organization of domestic environments.

One of the main aspects in the development of a modern housing type was the separation of bedrooms for parents and children. This was based on modern hygienic and moral reform principles, as well as on new understandings of childcare and education, within a context of rationalization of family planning and definition of modern households. Children became an object of scientific study, and their habits, schedules and environments were scrutinized in order to be rationalized as well[15].

The specialization of rooms for specific functions was complemented by the introduction of Western-style furniture. This involved a gradual transition from squatting on the floor to sitting, and a loss of flexibility. The living room as the space dedicated to relaxation but also to social interaction was one of the most affected by this 'invasion of furniture': different types of sofas, chairs, tables, lights and cabinets were now available. The generalization of TV sets during the same period affected the layout of that space[16].

It has already been mentioned that the construction of provisional public housing with foreign funding after the Korean War established an important precedent in the introduction of West-

13 See '22.6 Timeline: Evolution of the Standardized Unit Layout' later in this chapter.

14 See '22.1 Modern Architecture and Urbanism as Mechanisms of Control of The Modern State', earlier in this chapter.

15 See Figure 20-27 and Figure 20-28, Chapter 20, Volume 02.

16 See Figure 20-29 in Chapter 20, Volume 02.

ern features and modern amenities that would be later carried into the apartments. Probably one of the most important aspects of this modernization of the house was the rationalization of the most specialized areas: the bathroom and the kitchen.

In terms of the toilette, traditional dwellings had a separate outhouse, and a limited supply of water. There was no bathroom proper, so people would periodically go to the local public bath, called *mogyogtang* (목욕탕). The demographic boom after the Korean War put enormous pressure on the water supply and sewerage infrastructure of the city: in between 1960 and 1979, the population increased 3.3 times, from 2.45 million inhabitants to 8.11. This meant a yearly average of 308,000 during the 1960s, and of 287,000 in the 1970s (Yun, 2003, p. 326). In 1961 the Water Act was passed in order to address the shortage of infrastructure and the lack of technological expertise by making foreign loans available (Yun, 2003, p. 328). It appears that septic tanks and water tank toilettes were introduced around the establishment of the Third Republic in 1963. The *City Administration Overview* of 1962 recorded that only 8% of the excrements produced daily were processed through water tank toilettes in 1961, and data from the *White Book on Seoul Wastewater System* published in 1966 shows that only 5.5% of toilettes in the city were water tank toilettes (Yun, 2003, p. 339). This data shows that septic tanks were the most implemented system during the first years of the urban explosion of Seoul. In spite of the challenges of the infrastructure to cope with demand, the inclusion of the toilette within the main body of the house, its expansion to include bath facilities, and its closer linkage to the bathroom completely revolutionized hygiene and introduced modern concepts of privacy, intimacy and comfort[17].

The kitchen underwent a similar transformation. Traditionally it had also been detached from the main body of the house and located at a different level, due to the smells and to the fact that it housed the source of fire for the underfloor heating. With the introduction of modern domestic appliances and technologies, the kitchen was gradually incorporated to the dwelling. Ultimately, the generalization of the dining-kitchen and later of the open kitchen within the LDK space consolidated its central role within the household, reflecting as well changes in the roles of housewives. Studies for the rationalization of the kitchen show many references to the development of modern kitchens in the West, such as those of American home economist Christine Frederick in her articles published in the Ladies' Home Journal before World War I; or those from Austrian architect Margarete Schütte-Lihotzky for Ernst May in the 1920s. In spite of those references, the different articles show a lack of in-depth understanding of the specificities of the preparation of Korean food, which is quite different than Western food as it involves the preparation and storage of many ingredients and condiments, processes of fermentation, it traditionally does not use oven, etc[18].

The rationalization of the living environment also addressed clothing storage. In spite of the number of articles dedicated to the issue, there was no fixed standard for the provision of built-in cabinets in the apartments built by the KHC, as the evolution of unit layouts demonstrates[19]. It is also interesting to note how all the clothing showcased in the examples is of Western style[20].

In order to educate people in the apartment lifestyle, the magazine included rules on how to be a good neighbor in a collective housing building, since the population of Seoul traditionally lived in single storey houses and was not accustomed to sharing living spaces. The regulations make evident a conflict between traditional ways of life and a modern lifestyle[21]. For instance:

- Refrain from using common spaces in ways that could bother others - especially cooking.
- Do not use the kitchen sink drainage to dispose of food leftovers.
- Educate children so they keep quiet and do

17 See Figure 20-30 in Chapter 20, Volume 02.

18 See from Figure 20-31 to Figure 20-37 in Chapter 20, Volume 02.

19 See Figure 22-30 and Figure 22-31 of this chapter.

20 See Figure 20-43 in Chapter 20, Volume 02.

21 See Figure 20-44 in Chapter 20, Volume 02.

not bother others.

- Pets should not be raised in apartments for hygiene reasons.
- Be careful when drying the laundry not to spoil that of your neighbors below.
- Refrain from making noise.
- Do not throw garbage, dust or other items thorugh the windows; and do not peep into other people's houses through them either.
- In your daily routines keep in mind that you are not alone, but surrounded by a community. Dress and behave accordingly.

One important topic addressed in several articles over the years was the adaptation of traditional elements to the new apartment type. Among them, the inclusion of the traditional underfloor heating system (온돌, *ondol*) was developed at length. The adaptation of this feature to multi-storey housing posed many technical challenges due to the extra floor depth required, the circulation of air, the provision of fuel, etc. Thus, attempts were made to substitute it with modern hot water radiators. But resistance from users to abandon the use of a warm floor forced the development of modern ondol systems based on the circulation of hot water instead of air. The permanence of underfloor heating systems also allowed the traditional use of the floor for seating and sleeping[22].

Another technical challenge was posed by the storage of fermented foods and condiments, one of the main features of Korean cuisine. Traditionally, families kept fermented foods for the whole year in clay pots (옹기, *onggi*) buried in their yard. The transition to multi-storey collective housing challenged that custom, so designers had to come up with alternatives. Different options were considered over time, from forbidding them, to providing communal storage spaces, to designing special balconies and ledges on the façade, to providing special ventilated compartments in the kitchen[23]. Finally, the industry came up with special refrigerators which are widely used nowadays.

The layout of the house around a central space, or *madang* (마당), was another important traditional feature that was been kept in the transition to the apartment. This multi-functional space had been interiorized in modern, detached houses after the Korean War as a hall (마루방, *maru-bang*[24], and from there it was adopted in the apartments as the LDK space[25].

22.5 PRECEDENTS OF THE APARTMENT TYPOLOGY

This segement looks at precedents of housing types relevant in the development of the modern Korean apartment type.

a. Hanok: The Traditional Korean Courtyard House - (Korean peninsula, Joseon dynasty)

The traditional housing typology developed in Korea was a one-storey timber-framed structure built around a courtyard on stone foundations, with a hatched or tiled roof, called *hanok* (한옥). It represented the embodiment of local attitudes and values in regards to the arrangement of the dwelling, and remains a strong reference of Korean domestic culture. Its relevance in the emergence of a modern apartment culture has been widely studied by Korean scholars, so this section will rely on existing literature. A 1991 article by Sang-hae Lee is particularly helpful in describing the characteristics of the type (Lee, 1991):

Courtyard house - The void centre: Centuries of trial and experimentation in the shaping of living patterns resulted in a layout based on a courtyard or *madang* (마당), or a number of them, around which a series of rooms would be arranged.

Architecturally, the courtyard was the main route from the public space into the domestic domain, as well as the mediator between all indoor and outdoor spaces of the house. Almost all rooms and areas of the house had an entrance from it, so it took the functions of the entrance porch, the hall and the corridor altogether; besides serving multiple functions that could not be performed

22 See Figure 20-45 and Figure 20-46 in Chapter 20, Volume 02.
23 See Figure 20-47 in Chapter 20, Volume 02.
24 See Figure 22-25 on page 339.
25 See Figure 22-30 and Figure 22-31 of this chapter.

Figure 22-14. View over the rooftops of urban hanoks in Samcheon-dong, Seoul.
Image by photographer Han Young-soo (한영수), between 1956 and 1963.

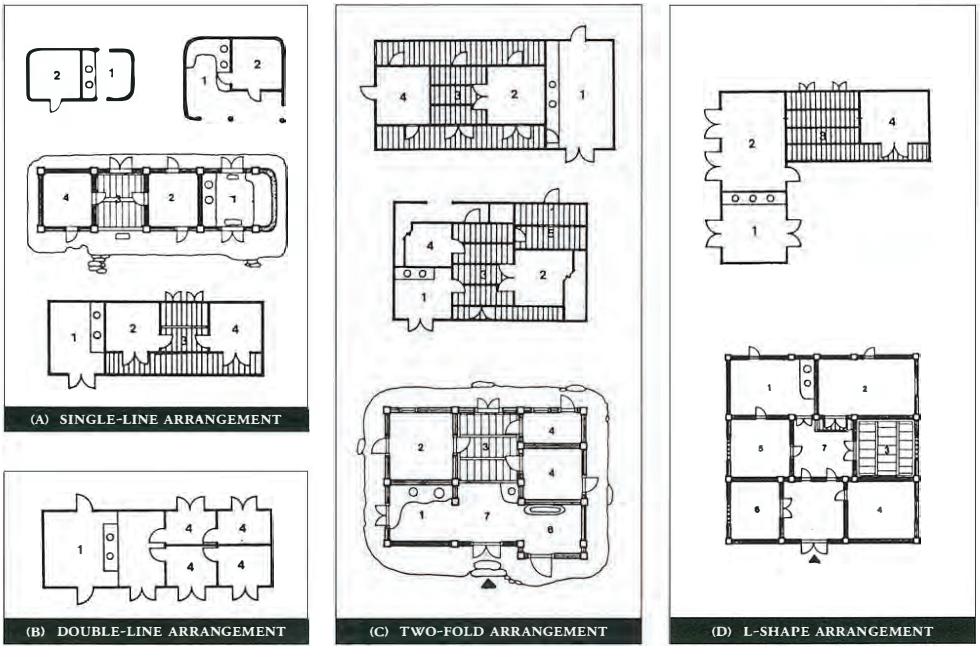


Figure 22-15. Different typologies of hanok depending on their structure.
(1. kitchen, 2. main room, 3. main hall (*daecheong*), 4. bedroom, 5. storage, 6. stable, 7. courtyard).
From Lee, 1991.

Figure 22-16. Image of the *daecheong* (main hall) of a renovated hanok in Gahoe-dong, Seoul, by architect Doo Jin Hwang.
The foldable doors help blur the distinction between inside and outside during the warm months. It is noticeable the continuity with the adjacent room, and the different types of floors: *maru* (마루) in the *deacheon* and and *ondol* (온돌) in the room next to it.
Image from the catalogue of the exhibition 'Stepping into Hanok for the New Millenium', organized by The National Trust of Korea (한국내셔널트러스트), 2008.

indoors, such as ritual celebrations, a playground for children, or a threshing ground during the harvest season. The courtyard was 'a room without a roof' (Lee, 1991, p. 68) without a specific purpose, which articulated the rest of the house, and hosted activities that did not fit in other spaces[26].

These were fundamentally one-storey constructions, so variations would be based on the horizontal expansion around these courtyards.

Zoning based on types of floor: Rooms arranged around the courtyard were mostly of two types, based on two main types of floor: *ondol* (온돌) and *maru* (마루). Ondol floors were heated by flues underneath, connected to a fire hole in the kitchen. These floors had an oiled paper finish and were mostly used in closed rooms used for sleeping. Maru floors were wood platforms raised in between the posts of the house to form the main hall (*daecheong maru*, 대청 마루), which were usually open on one side. *Maru* floors also extended along the *ondol* rooms, creating a covered, narrow outdoor space or veranda that acted as an interface in between inside and outside, similar to the *engawa* in Japanese traditional houses[27].

Additive modularity: The structural bays in between the wooden posts were called *kan* (간). They could vary in between two to three meters, depending on the availability of lumber and the social position of the residents. Thus, the process of building a house consisted in adjoining *kan* or structural modules. The sizes of houses could vary from two or three *kans* for humble households to ten or more for rich families. This additive character also implied that one would access one room from the adjoining one or from the maru outside, but there were no corridors as spaces dedicated to circulation in the Western sense.

Lack of specialization of rooms: Since all modules had basically the same size and people used less furniture than in the West, as sleeping and seating took place directly on the floor, each room could host different functions at different times: eating, sleeping and leisure activities were all performed in the same space. The kitchen was one of the few dedicated spaces, located near the main room as it was part of the heating system, but also hidden from visitors and directly accessible from outside. The toilet was arranged outside the main structure for hygienic reasons.

Variety of unit types: Based on the arrangement of *kan* in relationship to the structural framework, four basic plan types were possible. The most basic one was a linear arrangement of rooms under a single ridge beam, or 'single-line' layout. When the rooms doubled, still under a single ridge beam, a 'double-line' layout emerged. A third type would be based on the combination of the previous two, the 'two-fold' layout. One last type would be an 'L-shaped' types and their variations[28]. These four basic layouts could be then combined around one or various courtyards and surrounding walls to form compounds of varying complexity.

These different arrangements allowed adaptations to different climate conditions along the Korean peninsula, and to cater to different socio-economic levels, from the high-class *yangban*, to the middle class and commoners.

Spatial configuration as a reflection of social order: the arrangement of the dwelling space, as all aspects of domestic life, was regulated by strict Confucian ethics. Even the poorest families had separate rooms for men and women, and in the wealthiest households the inner quarters were set aside for women and children (안채, *anchae*), while an outer part, more open to outside visits, was reserved for men (사랑채, *sarangchae*).

In general, people lived with their extended families and servants, so modern concepts of privacy and intimacy were inexistent.

Lack of clear division inside-outside: A wide range of features allowed the living space to be extended beyond the covered shelter: the courtyard as an open-air room; the different degrees of exposure afforded by the different types of floors; the veranda as a transitional space; and the paper doors that could slide sideways or also be lifted

26 See Figure 22-17 on page 333.
27 See Figure 22-16.
28 See Figure 22-15.

up and out of the way[29] (벼락치기문, 'thunder' doors).

Relationship with the surroundings: The tradition of carefully positioning buildings in relationship to their surroundings for practical reasons but also for geomantic considerations was very important during the Joseon dynasty (*pungsu-jiri*, 풍수지리 or Korean *feng shui*). Due to the specifics of Korean climate (cold winters and humid summers), the southern exposure and cross ventilation were favored. The courtyard functioned as a micro-climate buffer that took on different configurations in order to adapt to local climates. According to *pungsu-jiri* , the ideal house would be located with a mountain in the back and a river in the front.

The courtyard as a generator of compact urban form: In its role as a buffer between the public domain and the domestic quarters, the courtyard facilitated the development of a low-rise, dense and introverted urban fabric[30].

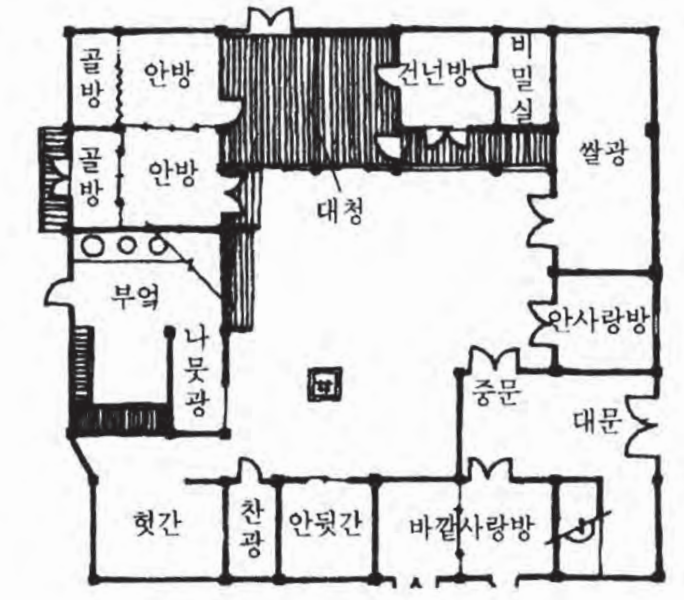


Figure 22-17. Prototypical traditional Korean house (*hanok*).
A series of perimetral rooms open directly to a the central courtyard (*madang*).
Image from Kang, B.-S., Kang, I.-H., Park, K.-j., et al., 1999.

29 See Figure 22-16 on page 331.
30 See Figure 22-14 on page 331.

b. Existenzminimum - Minimum dwelling - (Europe, 1920s)

In developed countries, industrialization since the nineteenth century brought about the concentration of vast numbers of population in cities and thus originated a housing crisis. This crisis was made even more evident with the reconstruction of cities after World War I and the economic crisis of 1929, as the ratio of rents versus wages of the most modest classes grew significantly.

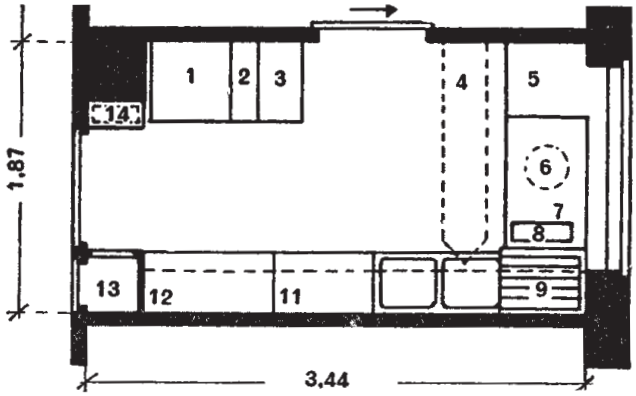
The provision of affordable and healthy housing, especially for people of minimum income, became the central problem for the architectural avant-garde, under the concept of 'minimum dwelling'. The slogan did not refer to reduction of living qualities but to an ideal new dwelling type capable of affording maximal livability within a space providing the minimum sanitary and hygienic standards. This was to be achieved through the adaptation of Taylorist strategies to housing planning and construction in order to lower costs: rationalization of the plans, improvement of overall organization, higher efficiency, standardization, etc., and facilitated the emergence of modern collective housing. The scientific studies of people's lifestyles, family structure, habits, etc. in order to optimize them were highly influential in the definition not only of the new domestic spaces, but also of the modern family. A prototypical implementation would be the Frankfurt Kitchen by Margarete Schütte-Lihotzky, for Ernst May[31].

These strategies had widespread application during the 1920s and 1930s -such as in the experiments of Ernst May in Das Neue Frankfurt or the CIAM 2 Congress (1929), under the theme of *'Die Wohnung für das Existenzminimum'* (The minimum subsistence dwelling)-, and have had extensive influence in the development of mass housing since[32]. In his speech at CIAM 2, Ernst May stressed that housing design was not about style and aesthetic values, but about the holistic approach to the basic cell for modern inhabitation:

> *'Even today it is extremely difficult for many architects to understand that in the construction of housing, the external appearance of the volumes and the distribution of facades should not be considered as the main tasks of architects, but that the most important part of the problem is the holistic construction of the individual housing cell according to the principles of a modern conception of life. In addition, it corresponds to them as well the urban task of incorporating to the image of the city the sum of these dwellings cells, that is to say the neighborhood (Siedlung), so that the same favorable conditions are created for each individual housing unit.'*
>
> (May, 1929, p. 112)

Nevertheless, under the market appropriation of the ideals of the Modern Movement, the concept of *Existenzminimum* has progressively left aside the concern for maximal livability to focus instead on the provision of minimums and the quest for maximal economic profit.

31 See Figure 22-18.
32 See Figure 22-19 and Figure 22-20.



1. stove
2. drawer for flour and salt
3. gas stove
4. folding ironing board
5. food closet
6. rotating stool
7. work counter
8. garbage slot
9., 10., 11. sink and counter
12. closets for pots and pans
13. broom closet
14. heater

Figure 22-18. Proposal for modern kitchen: the Frankfurt kitchen, developed by Grete Schütte-Lihotzky for E. May.
With the aim to achive a high level of specialization and to increase functionality and hygiene, all functions and equipment nor directly related to the manipulation of food were eliminated. This allowed, in return, to reduce dimensions and to streamline all preparation processes. The kitchens of railway dining cars were used as reference.

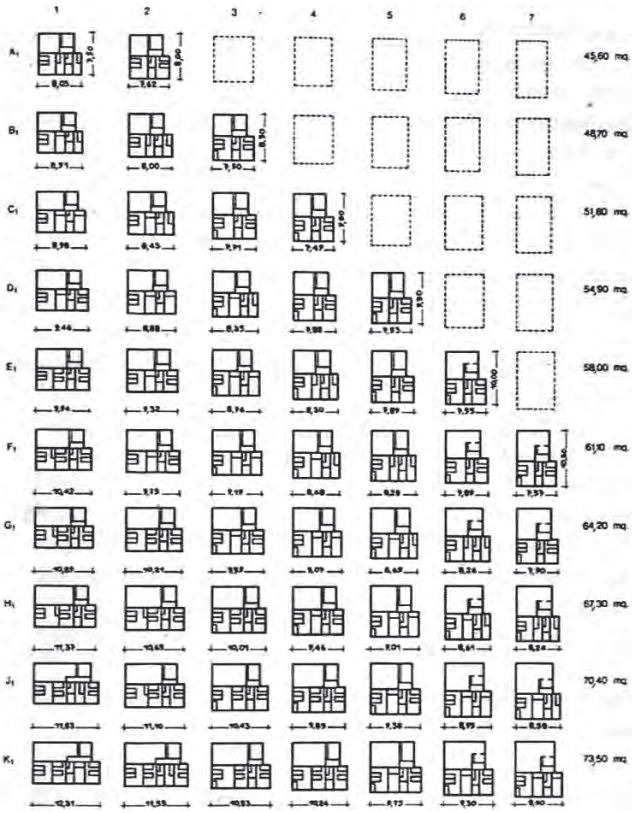


Figure 22-19. E. Klein, typology research series based on increments of building depth and usable floor area.
Proceedings of the 2nd CIAM Congress, Frankfurt 1929.

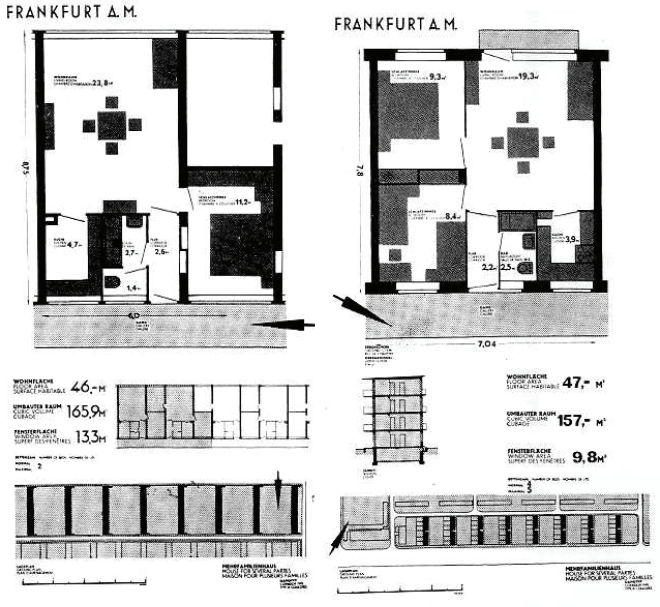


Figure 22-20. Samples of research on *existenzminimum*.
From the exhibition organized by E. May in occasion of the 2nd CIAM, Frankfurt 1929.

c. Standardized unit layouts with separation of day and night quarters - (Europe, 1920s)

The standardized Western housing layout is based on the separation of 'day' and 'night' areas. This division of the domestic environment responds not only to time frames, but also to different levels of privacy. Day areas are comprised of a living-dining room as the main space of the house, together with the kitchen that serves it. Night areas are structured along a corridor that serves the different bedrooms, with the storage spaces and bathrooms that serve them[33].

This functional division of the home resulted from the rationalization efforts of the Frankfurt city officials, in connection to the *zeilenbau* planning approach. Once it was settled that the best orientation of the bar blocks for lighting purposes was north / south, it was established that bedrooms should get the eastern orientation, while daily activities would face the west (Bauer, 1934, p. 182).

The work of Alexander Klein in establishing graphical methods of analysis for floor plans was highly influential in the development of *existenzminimum* and the establishment of day and night quarters. In a widely published diagram of his research for the *Reichsforschungs-Gesellschaft für Bau und Wohnung* (National Research Organization for Building and Housing), Klein analyzed the flows of the three main activities that took place in the home: cooking-eating, relaxation-socialization, and sleeping-bathing. Based on that, housing layouts that supported short circulations without interferences with other flows were shown as 'functional' and thus, 'good'[34] (Klein, 1980).

The main defining characteristics of the standardized unit layouts with separation of day and night quarters were:

- **Definition of gradients of privacy:** Outsiders are allowed into the reception area, and guests can be let in the living room as a space for socialization and representation, but the corridor that usually departs from it towards the bedrooms demarcates a threshold that only the members of the family can cross.
- **The house as a spatial representation of the family as a social unit:** and thus as a symbol of hierarchy.
- **Specialization of spaces:** rooms become highly specialized due to their size and their relationship to the rest of the house. This specialization is supported by the use of fixed furniture. Part of this specialization derives in the definition of *'served spaces'* and *'servicing spaces'*. The corridor takes on the function of a buffer that provided privacy to the bedrooms.

Beyond a functionalist approach, Xavier Monteys has observed the limitations of the 'correct' unit layout according to Klein[35]:

- The central room in the 'conventional' layout served as an extension and buffer of the rest of the spaces of the house, as demonstrated by the furniture shown. This was eliminated and replaced by a corridor that functioned merely as a distributor, thus losing its open-ended character.
- Room sizes in the 'functional' layout were adapted to their particular functions, so they were more difficult to adapt to new functions and needs over time.
- Room sizes in the 'conventional' layout were more regular, and thus furniture could be easily shifted from one to another in order to adapt to different needs and lifestyles.

Based on that, the author concluded that it was questionable to level the criticism of a housing layout only on requirements of functionality, and argued for the inclusion of spaces that could be adapted over time according to the changing needs of users.

33 See Figure 22-21.
34 See Figure 22-22.
35 See Figure 22-23.

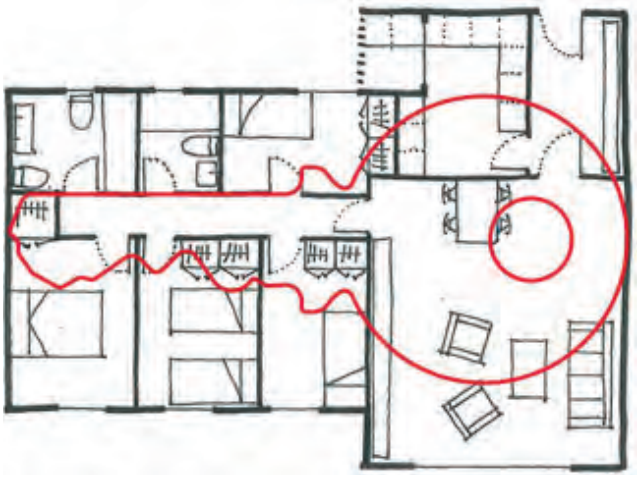


Figure 22-21. Typical plan from a 1960s apartment building in the Sants neighborhood (Barcelona).
Prototype of the housing stock built during the second half of the 20th century in the West. The division among day and night quarters resembles the profile of a key (Monteys et al., 2006, p. 3).

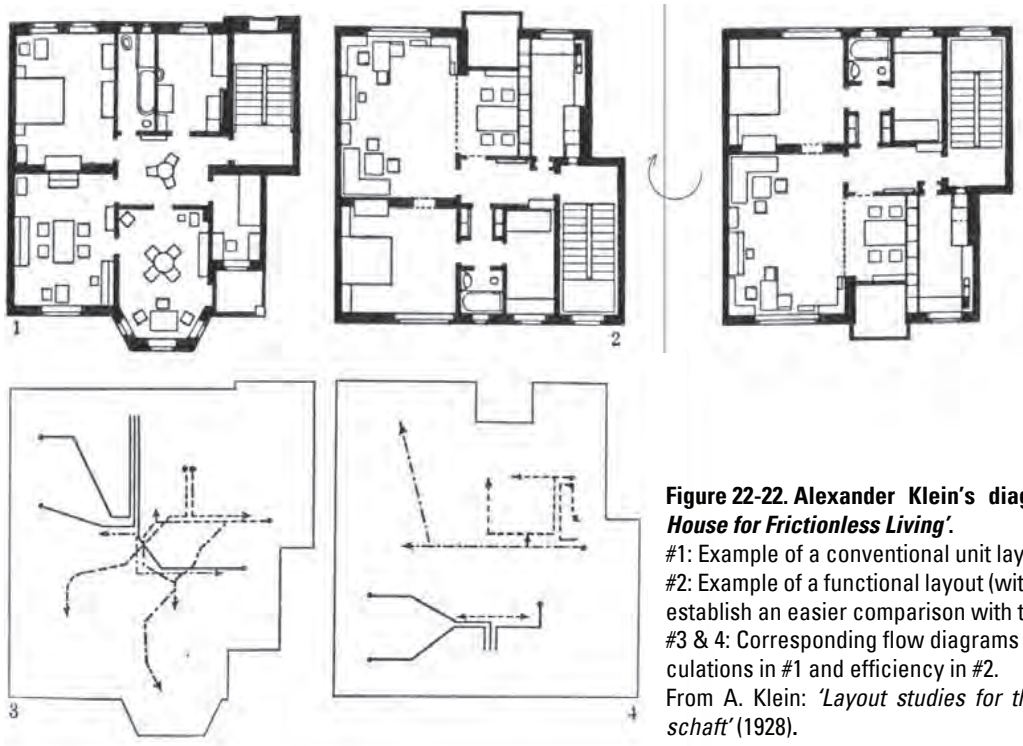


Figure 22-22. Alexander Klein's diagrams for *'The Functional House for Frictionless Living'*.
#1: Example of a conventional unit layout.
#2: Example of a functional layout (with symmetric plan in order to establish an easier comparison with the first one).
#3 & 4: Corresponding flow diagrams showing redundancy of circulations in #1 and efficiency in #2.
From A. Klein: *'Layout studies for the Reichsforschungsgesellschaft'* (1928).

Figure 22-23. Demonstration of the embedded flexibility of the 'wrong' functional layout according to Klein.
By rearranging the original furniture in different combinations, the 'wrong' functional layout allows for multiple combinations due to the lack of specialization of spaces (Monteys, 2006, p. 59).

d. Spec Housing – (South Korea after the Korean War, 1960s-70s)

Spec houses (집장사집, *jibjangsaqjib*) were a type of single-family detached dwellings built by small-scale developers, to be sold speculatively. They became very popular during the initial stages of the economic, demographic and urban expansion since the 1960s up until to the mid-1970s, when the new typology of *apat'u tanji* was popularized. Since they were not built for a specific client, their design and construction were dictated by the building code and the real estate market, and thus reflected popular taste. In his book *'Architecture and Urbanism in Modern Korea'*, Inha Jung attributes to them one of the major achievements of Korean domesticity in the twentieth century. Namely, the sensitive compromise between a modern, Western-style house and traditional lifestyles (Jung, 2013, p. 34).

During the first half of the twentieth century, Seoul was witness to a great deal of domestic experimentation, due to the adaptation of the traditional courtyard house to urban settings in the form of the more compact *'urban hanok'*, and to the housing types imported by Western missionaries and Japanese colonizers. These were symptoms of deep changes in Korean society and of an evolving market. One particular type of interest was the so-called *munhwa jutaek* ('cultural house', 문화주택), a hybrid modern type that had appeared originally in Japan during the 1920s as the consequence of rapid urban growth and of an enlightened movement to improve traditional housing conditions (Jung, 2013, p. 34). It was based on American cottage and bungalow types from the beginning of the century, designed to facilitate a family-centered middle class lifestyle, where the housewife could take care of household chores without the help of domestic servants. Two housing fairs in Tokyo and Osaka in 1922 were instrumental in publicizing the new type. In practical terms, it introduced Western lifestyles, particularly the specialization of rooms (living room, family room, children's room, housewife's room, etc.) and an increased awareness for privacy. The Japanese elites brought the type to Seoul, and although it was too expensive and too unfamiliar for Koreans to be widely assimilated, it became a new model to aspire to. It is interesting to note the association of 'culture' with modernization and westernization[36]. This association and the tensions between tradition and modern lifestyles would have a long lasting influence in the development of housing in Korea during the rest of the century.

It would not be until two new factors collided in the 1960s that the spec house as a truly hybrid modern Korean typology would emerge: the increasing housing shortage required single houses to increase their height from one to two floors; and the popularization of modern household appliances and technologies. Jung points out four defining characteristics of the type:

- **Absence of the central courtyard:** a newly formed space corresponding with the Western living room combined the functions of the courtyard with those of the main hall or *daecheong maru*. This space, as in the traditional courtyard, was the main buffer between the public space and the domestic domain, and acted as a main distributor between all the rooms of the house. Thus, despite adopting the Western denomination, this living room functioned very differently than in its original version as an independent, private space[37].
- **Relocation of the master bedroom and the kitchen:** in the traditional *hanok*, the female quarters were the most secluded, even though they could be used for domestic functions such as family meals. The kitchen needed to be adjacent, as it was integral to the heating system. The introduction of boilers since the mid-seventies made this connection unnecessary, and the kitchen gravitated closer to the central living room, while the female quarters (in the guise of the Western master bedroom as the embodiment of the female domain) while still independent, was pushed to the front of the house in order to get the best sun exposure.

36 See '2. Project of Modernization of the Domestic Environment' earlier in this chapter.
37 See Figure 22-25.

Figure 22-24. Elevations of spec houses.
The designs demonstrate the use of new materials -concrete and brickwork- and the adoption of roof shapes derived from the bungalow houses of the colonial period.
From Jung, 2013, p. 72.

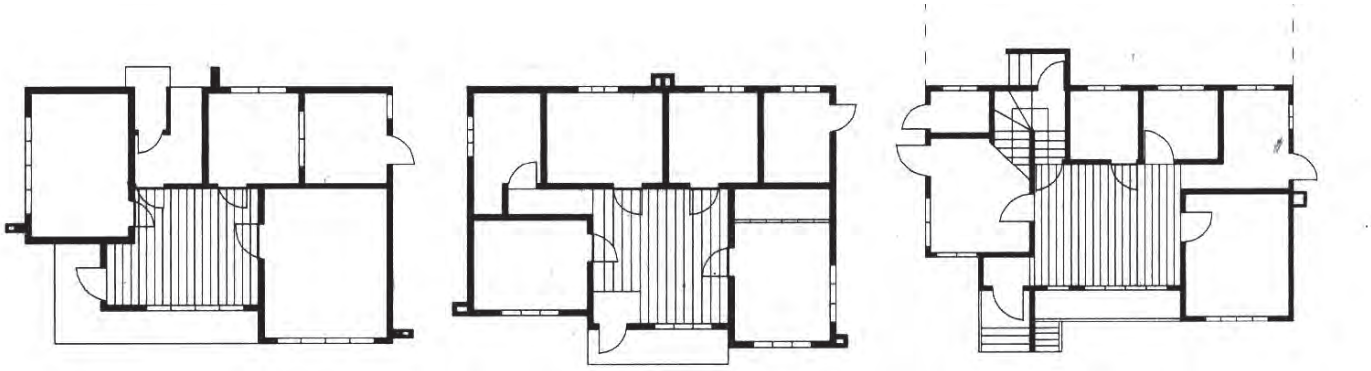


Figure 22-25. Floor plans of spec houses.
They reflect the transition from the central open courtyard to an indoor living room acting as a foyer and distributor for the rooms around it. From Jung, 2013, p. 71.

Figure 22-26. Spec house in Hannam-dong being renovated for commercial purposes.
Image by author, January 16th, 2018.

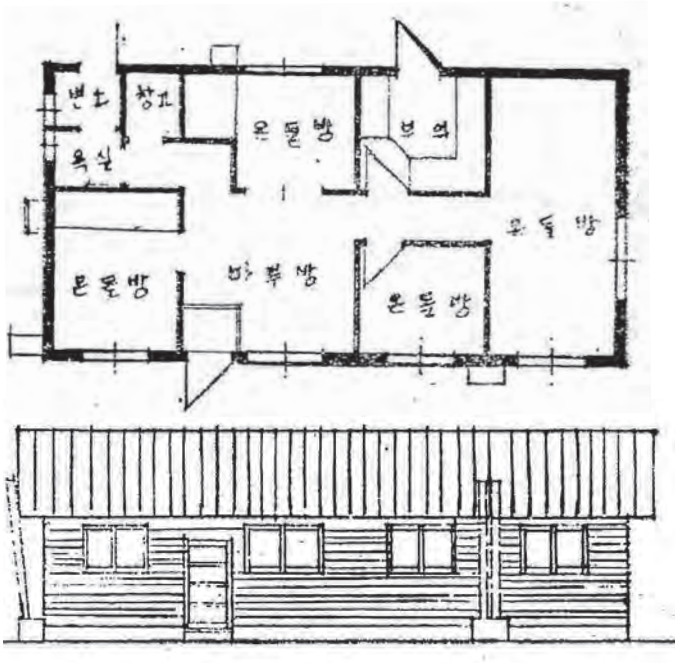


Figure 22-27. Sample of the standardized urban houses built by the KHC during the 1970s.
They followed the unit layouts of the spec houses built by the private sector. From 주택 (*chutaek*) magazine, volume #29, June 1972, p. 82.

- **New spatial possibilities afforded by modern structural systems:** The structural system of the timber post-and-lintel construction of the *hanok* was based on spatial modules (*kan*) as basic cells. A traditional house consisted in the assemblage of different cells around a courtyard, basically forming one structural bay or 'layer' in depth. The increasing availability of reinforced concrete during the 1960s allowed for wider spans and thus interior spaces became deeper and more complex. In particular, the emergence of the living room as a 'covered courtyard' in the center, with rooms surrounding it, made possible the design of houses with double bays and opened new possibilities for domestic experimentation[38].
- **New building styles made possible by new materials:** Harking back at the style of the *munhwa jutaek*, the traditional Korean roof was substituted for a steep gable roof with the front door under the gable, even though the roof in this case was not supported by wooden trusses, but by a concrete slab[39] (Jung, 2013, p. 72).

38 See Figure 22-25.
39 See Figure 22-24 and Figure 22-26.

e. The Japanese nLDK Apartment System – (Japan after World War II)

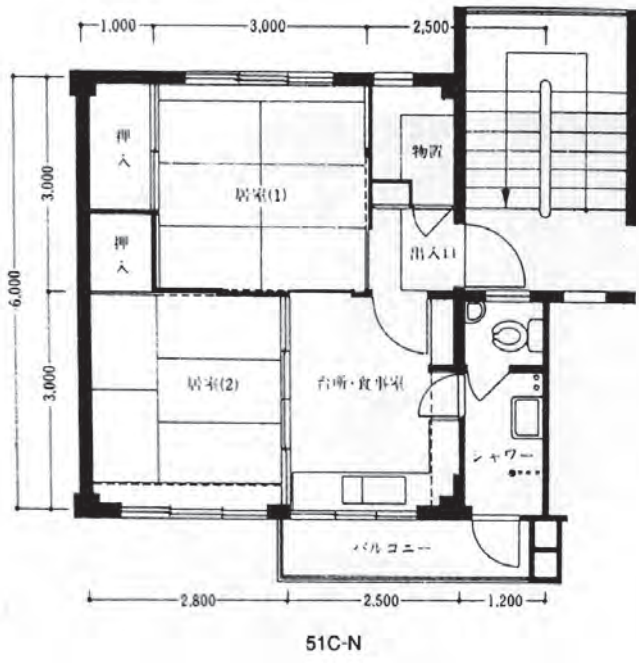
Background

Due to its aim to modernize traditional lifestyles from a reformist and hygienist point of view; to the pursuit of standardization; to its aim to conform the domestic environment of an emerging urban middle class; to its aspiration to contribute to a modern national identity; and to the sheer scale of their implementation, the Japanese nLDK apartment system is an indispensable reference in the development of the Korean *apat'u*. The following section is based on one chapter from Michelle L. Hauk's graduate thesis on Japanese postwar New Towns, entitled *'The Context of Public Housing Provision in Postwar Japan'*.

In the 1950s and 1960s, Japan began to recover from the War and a debate emerged about its modern national identity. The recovery took special importance in terms of the provision of urban housing, not only due to all the stock destroyed during the war, but also due to the unprecedented demographic explosion brought about by the economic boom. The construction of a modern identity became tightly related to the emergence of a new urban middle class; to the new paradigm of the nuclear family as a socio-economic unit; and to the emergence of the consumer society. Within this context, the construction of a modern domestic space embodied the lifestyle paradigms of health, culture, individualism and democracy (Hauk, 2015, p. 85).

A series of measures were implemented in order to address the housing shortage, such as the creation of the Japan Housing Loan Corporation (1950), the Public Housing Law (1951), and the implementation of five-year housing construction plans (1966). Similarly, a series of state-led public housing initiatives were launched, in collaboration with faculty from prestigious universities.

In 1955, Prime Minister Hatoyama created the Japan Housing Corporation in order to improve the housing conditions of the growing middle class. The JHC followed the model of similar European governmental agencies created after World War II and would become one of the world's largest



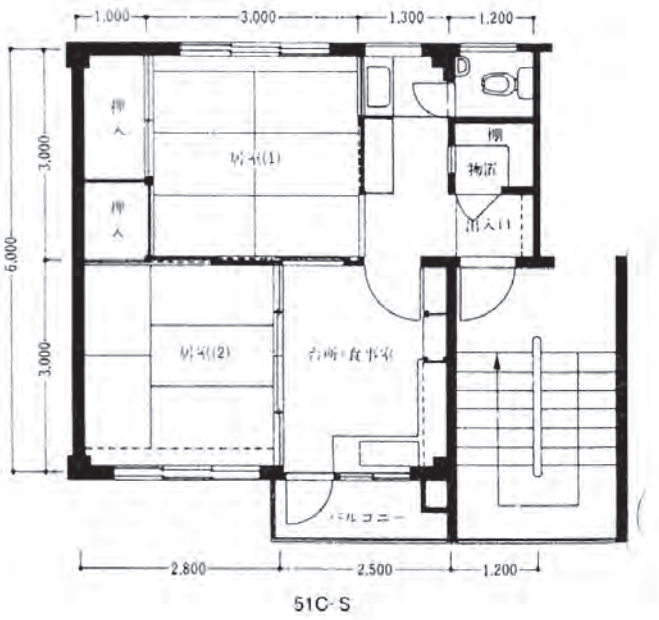
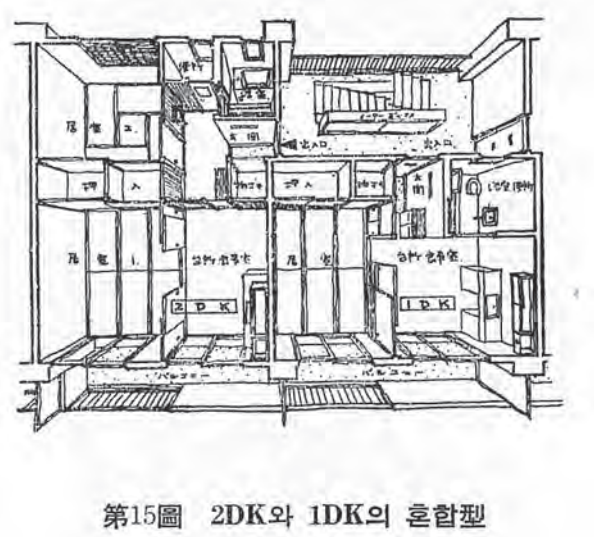


Figure 22-28. Standard design 51C for public housing by the Yoshitake Laboratory for the Japanese Housing Corporation (1951).
This case is a 2DK, for two bedrooms and a dining-kitchen space without a living room. It was characterized by the separation of sleeping quarters and the provision of modern kitchen and bathroom appliances. There two variants: one with a north facing entry and another with a south facing entry.
Source: Hauk, 2015, p.195.



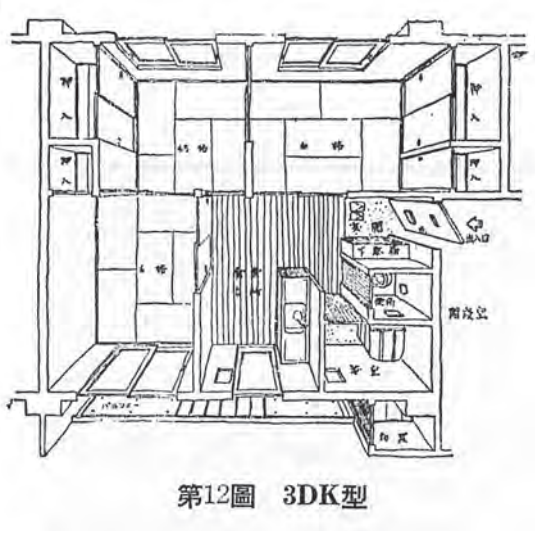


Figure 22-29. Housing layouts developed by the Japanese Housing Corporation (JHC), based on the nLDK system.
On the left, floor of a danchi that combines a 2DK unit and a 1DK unit with a shared staircase. On the right, a 3DK unit.
From 주택 (*chutaek*) magazine, volume #7, December 1962, pp. 76-78.

developers of low and medium income housing and has had enormous impact in shaping Japan's contemporary domestic landscape. By 1960 it had eliminated most cases of homelessness and cohabitation. By 1970 it had built over 500,000 new units, and by 1973, 810,000 (Hauk, 2015, p. 85).

Design

One of the most important precedents of the nLDK system was the work of architectural theorist and reformist Nishiyama Uzō. His thesis (*'Thesis on the Separation of Eating and Sleeping',* 1942) proposed a theoretical system of residential planning based on minimum dwelling as an alternative to traditional, free plan housing. The proposal was based on surveys conducted during the war. Strongly influenced by modernist hygiene and moral reform, he believed the conclusions of the surveys pointed at a strong demand for the separation of uses within the household. His work had a very strong influence in the housing policy of the two following decades (Hauk, 2015, p. 78).

In 1951, the Yoshitake Yasumi Lab at Tokyo University presented different typologies to the Public Housing Committee, in order to implement them in public housing complexes. The studies drew from Nishiyama's work, the housing theories pioneered by female architect Hamaguchi Miho, and from their own field research. Out of the main three options (Type A, 16-*tsubo*; Type B, 14-*tsubo*, and Type C, 12-*tsubo*), the Committee chose layout C (35m2). It would be called the '51C Apartment' (for 1951 Type-C Apartment), and became the prototype for many of the housing estates built by both government agencies and private developers[40]. The layout was optimized in order to guarantee the separation between sleeping and eating spaces, and the separation between the bedrooms of parents and children. This prioritization of the division of functions was a complete departure from traditional domestic environments and reflected the reformist, modernist and Westernized paradigms that defined Japan's post-war approach to housing.

The design proposed two bedrooms separated by a fixed wall rather than by traditional sliding doors (*fusuma*). The kitchen, based on the studies of female architect Hamaguchi Miho, showcased a modern kitchen unit with domestic appliances and was large enough to accommodate a family meal. It would be later called 'dining-kitchen'. The unit also included a modern toilet, closets and a balcony to the south. There were two variations, one with the staircase on the southern side and another one where it was on the north side[41] (Hauk, 2015, p. 82).

The prototype adopted later by the JHC would be called 'nDK Apartment', where n stood for the number of bedrooms, and DK for the dining-kitchen space. The most common apartment type would be the 2DK apartment, a refinement the original 51C Apartment of 12-*tsubo* (35m^2). Other common types in the 1950s and 1960s were the 1DK, 2K, 3K and 3DK[42].

Outcomes

The main consequences of the introduction of the nDK system were:

- Introduction of the *'chair lifestyle'*: The dining-kitchen became the center of family life. Its main characteristics (height of the modern kitchen unit, and a linoleum or wood floor that could be easily cleaned instead of the traditional *tatami*), made traditional sitting patterns on the floor uncomfortable and encouraged the use of Western-style furniture. This, in turn, further prevented the flexible use of space.
- Standardization of modern lifestyles: The standardization of dwelling units so they could fit into mass-produced structures within systematized housing estates had a direct impact on many features, from the layout of the units to the interior finishes, appliances and furniture.
- Mass consumption: the modernization of the home after the war coincided with an increasing purchasing power of the middle class and with the emergence of the culture of mass consumption. All kinds of appliances offered

40 See Figure 22-28.

41 See Figure 22-28.

42 See Figure 22-29.

both convenience and status to housewives. The Westernization of lifestyles brought about more fixed pieces of furniture, like sofas, pianos and cabinets, which encroached upon the limited space of the units.

- Variations of the model: The requirements for more space challenged the modest dimensions of the widespread nDK Apartment, forcing the JHC to diversify types by the late 1960s. The dining-kitchen was enlarged to include a living room area, giving birth to what is known today as the nLDK Apartment System, and diverse arrangements of bedrooms were introduced. By the late 1970s, a number of variations became increasingly common, such as the 4LDK (Hauk, 2015, p. 90).

While the standardization of housing units allowed the JHC to accomplish its quantitative goals during the post-war period, a number of issues arose over time:

The nLDK apartment type was designed to support the adoption of modern paradigms, but failed to harmonize traditional Japanese lifestyles with Western ones. The fixed layouts, limited sizes, reduced storage and the incorporation of Western-style furniture rendered the units too small and inflexible. Also, the high level of standardization of layouts did not reflect the diversity of Japanese lifestyles (Hauk, 2015, p. 91). The model of the middle class nuclear family for which the layout was catered to transitioned into more fragmented patterns formed by single parents, couples without children, elderly citizens living alone, etc. Also, new working patterns emerged that demanded the combination of the home with the workplace.

By the 1990s it was obvious that the housing standards and lifestyles that the nLDK apartment system supported did not reflect the social and economic development of the country, and a series of research projects were developed through innovative competitions and experimental commissions, aiming to a broader diversity of uses, larger sizes, and alternative approaches to the urban context[43].

43 See '24.1 Rationalization and Standardization of the Domestic Environment' in Chapter 24, Volume 01.

22.6 TIMELINE: EVOLUTION OF THE STANDARDIZED UNIT LAYOUT (TOWARDS A MODERN KOREAN DOMESTICITY)

The modern apartment layout as the setting for everyday life is something we take for granted; but it is made up of a complex arrangement of technologies, spaces and devices that were all major breakthroughs at the time of their introduction. For instance, the corridor as a spatial strategy for removing circulation from the main rooms and to separate servants from gentlemen and ladies appeared in England in the seventeenth century; the individual bedroom was invented by Henry Roberts in his lodging houses for the working classes in London in the mid-nineteenth century; the modern kitchen was developed through a series of innovations at the turn of the twentieth century that consolidated in the Frankfurt kitchen in 1926 by Margarete Schütte-Lihotzky; etc. In her 1978 essay entitled *'Figures, Doors and Passages'*, author Robin Evans discussed the dual nature of residential layouts as both an ordinary commodity but at the same time pregnant with meanings, purposes and effects:

> *"Ordinary things contain the deepest mysteries. At first it is difficult to see in the conventional layout of a contemporary house anything but the crystallization of cold reason, necessity and the obvious, and because of this we are easily led into thinking that a commodity so transparently unexceptional must have been wrought directly from the stuff of basic human needs. […] the characteristics of modern housing appear to transcend our own culture, being lifted to the status of universal and timeless requisites for decent living. This is easily enough explained, since everything ordinary seems at once neutral and indispensable, but it is a delusion, and a delusion with consequences too, as it hides the power that the customary arrangement of domestic space exerts over our lives, and at the same time conceals the fact that this organization has an origin and a purpose."* (Evans, 1978, p. 56)

This subchapter traces the evolution of the nLDK system based on the plan layouts from the Case Studies[44], in order to understand how a modern domesticity has been formed in parallel to the development of the typology. The evolution is shown in a timeline format[45], with a description of the most relevant evolutions below. The time frames described relate specifically to the development of unit layouts and thus do not strictly correlate to the general phases in the evolution of mass housing in Seoul established in Chapter 6 of Volume 01, based on multiple other variables.

Minimum Housing

Initially, apartment buildings were built in Seoul to relocate people forced out of informal settlements by the city council's hygienist policies. They were small, with very basic facilities. The 1962 Mapo Apartments were the first apartment complex in the true sense of the term[46]. Despite the initial highly publicized aim to make the general public aware of the new typology, the apartments were fairly small. Most were 40m^2, the buildings had six stories but no elevator, and access was via open corridors. There was no central heating or hot water, and charcoal briquettes were needed for cooking and heating. The internal arrangement of the units was based on early twentieth century European proposals for worker's housing. Dwellings for the working classes had been explored in great detail in the modern tradition. CIAM 2 in 1929 specifically dealt with the topic of minimum housing (*Existenzminimum*) from a rational perspective, showcasing the work of Ernst May and his team in Frankfurt and the theoretical work of Karel Teige, Le Corbusier, Victor Bourgeois and others.

The kitchen and bathrooms were located as they were in their Western counterparts. The most obvious concession to the Korean way of life was the transitional area between the inside and the outside of the home once you walk through the door. This area is where people take off and leave their shoes, an essential ritual to keep the house

44 See chapters 7 to 18 in Volume 02.
45 See Figure 22-30 and Figure 22-31 in this chapter.
46 See Case Study #1, Figure 22-30 on page 346.

clean in cultures where people traditionally sit on the floor. This feature would affect how the apartment typology would subsequently develop[47].

Modern Luxury For the Wealthy

Built in 1970, the Hangang Mansion Apartments[48], as their name suggests, were more pretentious and sought to popularize the apartment typology among the wealthier classes. This change in the target group of the apartments was a reaction to the failure to the public housing policy through the 'citizens apartments' after the collapse of the Wow apartments in 1970. They came in a much broader range of sizes, and some units even had two floors. Interior layouts were based on the separation of day and night quarters, through a corridor that safeguarded privacy.

Besides the separation of night and day quarters, another new feature was the location of certain rooms on the south side to take advantage of direct sunlight. In the daily quarters, the living room would take that position, while the kitchen gravitated towards the north. This piece was still segregated from the dining room – living room area. In the sleeping quarters, the wet cores of bathrooms tended initially to be located on the northern side, adjoining the kitchen in order to simplify the layout of vertical piping and drainages. This meant that master bedrooms would be located on the northern side, as they typically featured a private bath. Over time this quickly changed and finally master bedrooms faced south. Another development was accessing the units via a stairwell shared by two homes on each floor rather than from a corridor along the northern facade, which made it possible to have floor-through apartments that were totally private on both sides. This allowed units to be accessed from the center of the building, improving internal circulations. This feature became more common as the typology became widespread during the 1970s.

Another interesting feature was the lack of a vestibule: the front door of the unit opened directly into the living room, with only the step where shoes were taken off by means of a threshold. This feature refers to the role of the living room in spec houses (*jibjangsaqjib*, 집장사집) of the time, where in spite of the English denomination, the living room functioned as a covered courtyard of sorts, buffering the domestic domain and the outside, and providing access to the different rooms[49].

The 'heliotropism' in the layout of the units was inherited both from traditional lifestyles and from the modernistic hygienist tradition, and resulted in an interesting hybridization: while *zeilenbau* planning developed in Frankfurt in the 1920s favored N/S building bars with units facing East and West, Korean buildings univocally had a main façade facing south.

Generalization of the Apartment Type

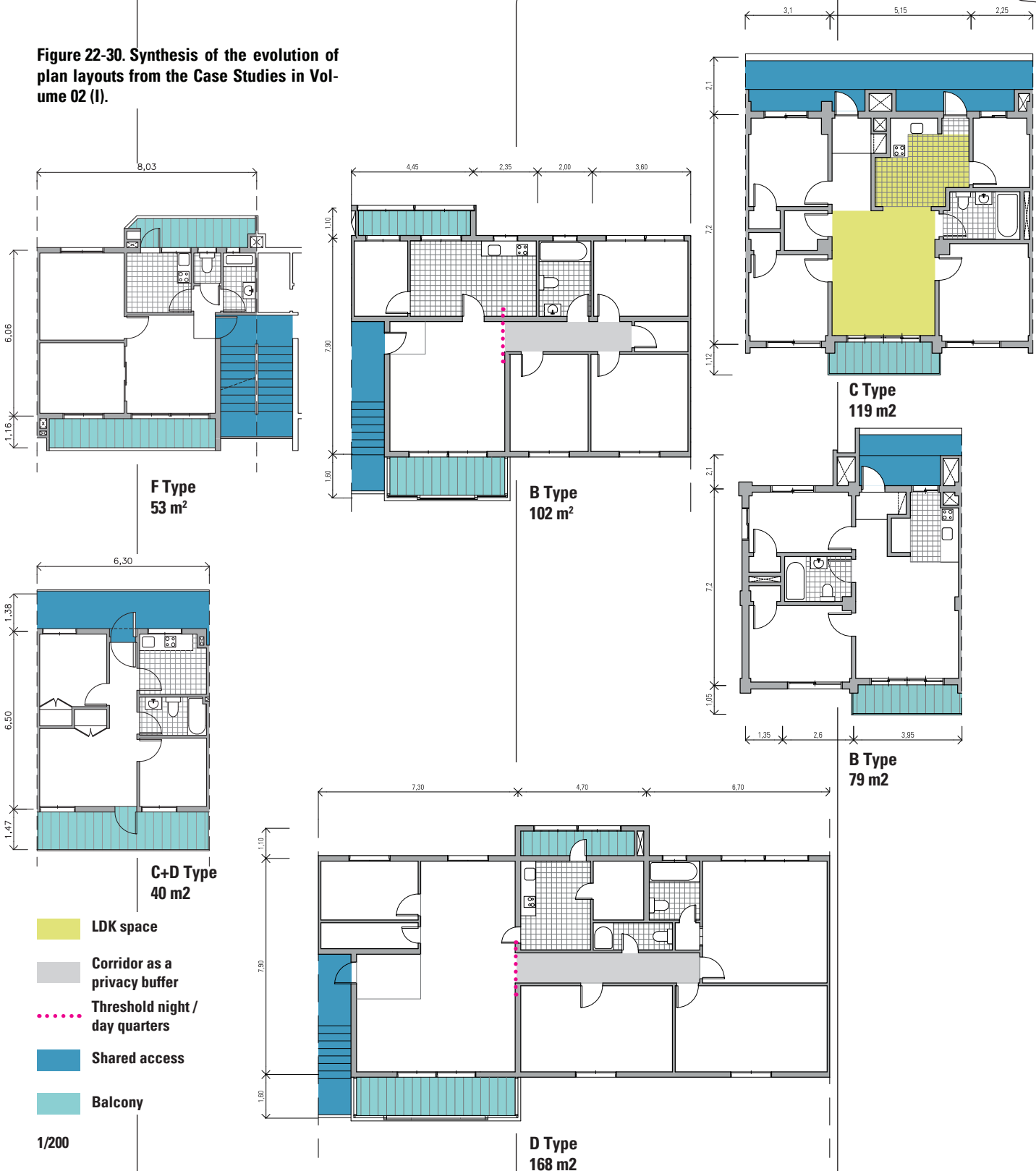
In 1971, the Yeouido Sibum Apartments[50] were built with a feature that set a new trend for future apartments in Korea: the living room was moved to the center of the home, with bedrooms placed around it and opening directly to it. This setup eliminated the strict separation between day and night quarters, and thus the need for corridors as transitional spaces in between them.

This central living room was also expanded and integrated the kitchen into a unique space occupying the entire central section of the home, from north to south. This model was known as the open-plan or LDK (living room, dining room, kitchen), and reflected contemporary western open kitchen trends based on a changing perception of cooking as social act rather than a domestic chore, on the possibility to supervise children while cooking, on the changing role of women, and also on changes in the preparation of meals with the emergence of prepared foods[51].

The central LDK space harked back to the courtyard (*madang*) in the traditional Korean house[52] (*hanok*), and to the living room in the spec houses, as mentioned earlier. It meant a major departure from western unit plan models – in particular,

47 See Figure 22-32 and Figure 22-33 on page 351.
48 See Case Study #2, Figure 22-30 on page 346.
49 See Figure 22-25 on page 339.
50 See Case Study #3, Figure 22-30.
51 See Figure 22-34 on page 351.
52 See , Figure 22-17 on page 333.

Figure 22-30. Synthesis of the evolution of plan layouts from the Case Studies in Volume 02 (I).

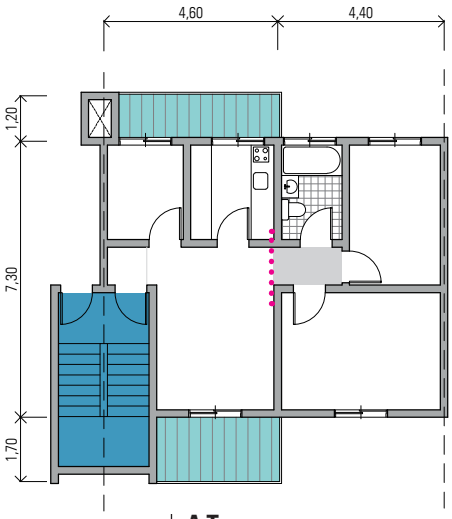


01/ 1962
MAPO
APARTMENTS

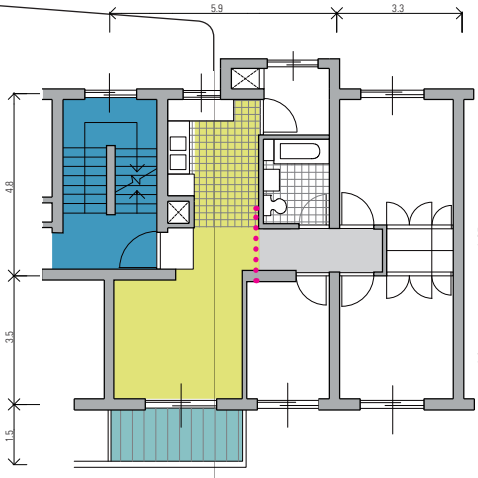
02/ 1970
HANGANG MANSION
APARTMENTS

03/ 1970
YEOEUIDO SIBUM
APARTMENTS

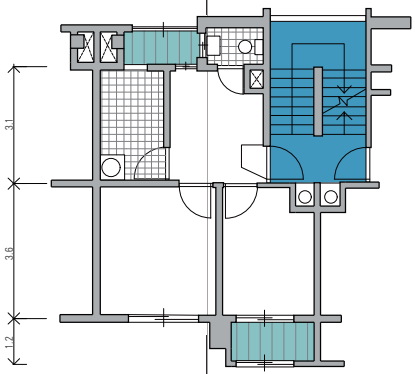
1960 1965 1970



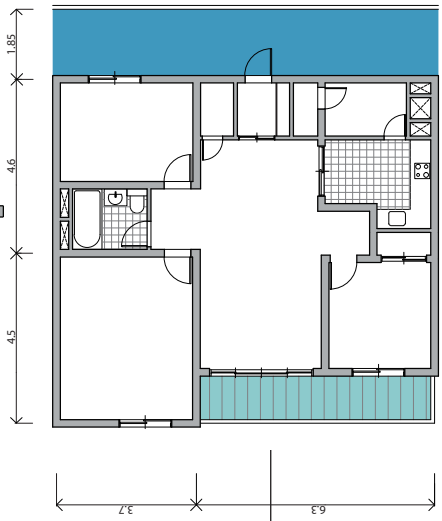
A Type
72 m2



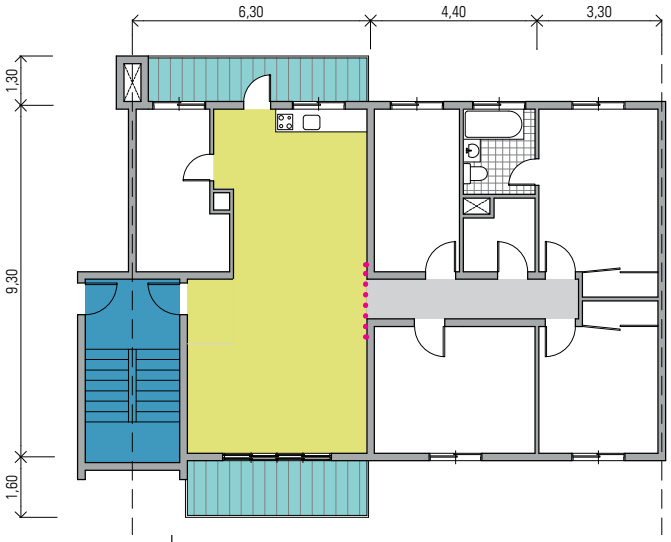
C Type
63 m2



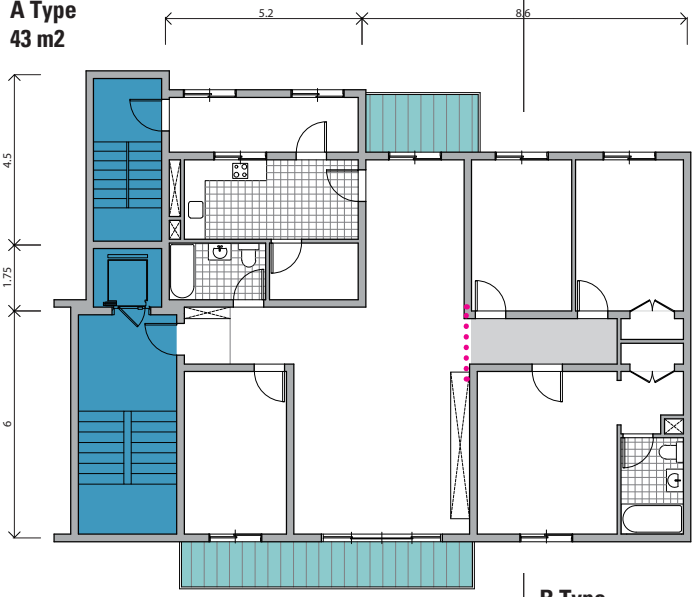
A Type
43 m2



A Type
82 m2



B Type
138 m2



B Type
160 m2

04/ 1972
BANPO
APTS

05/ 1975 JAMSIL
2-TANJI APTS

06/ 1975
HYUNDAI
APKUJEONG APTS

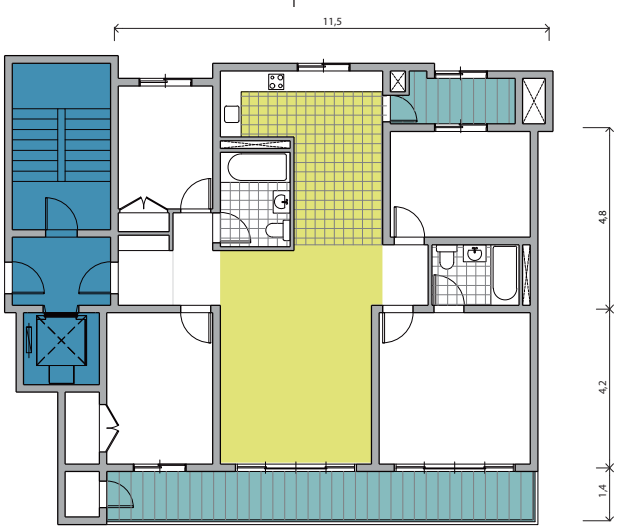
07/ 1983
JAMSIL
5-TANJI
APTS

Figure 22-31. Synthesis of the evolution of plan layouts from the Case Studies in Volume 02 (II).

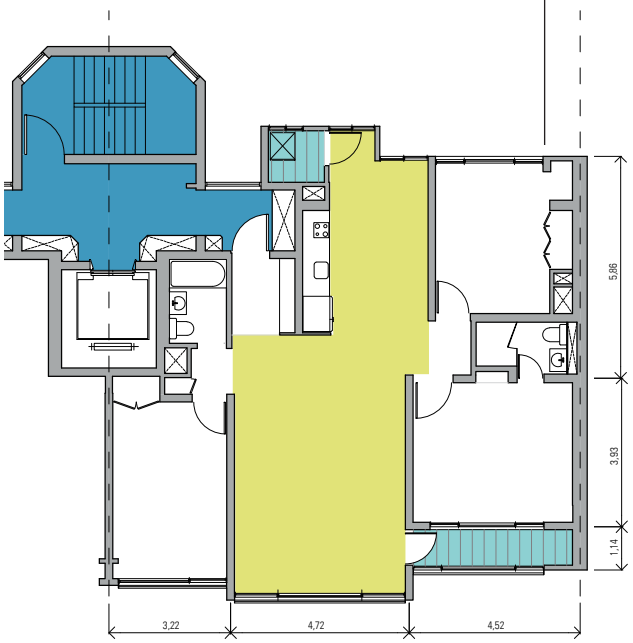
07/ 1983 JAMSIL 5

08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

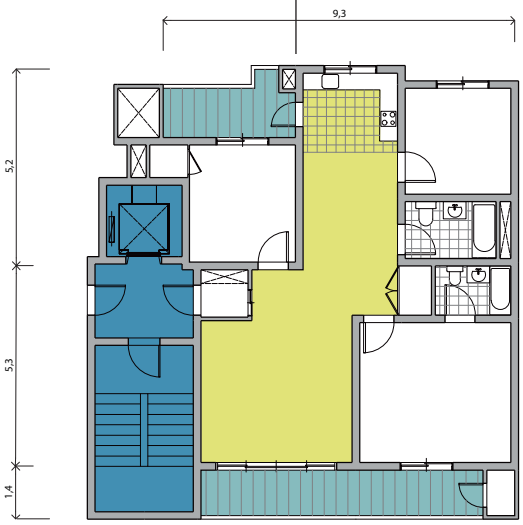
09/ 1986
OLYMPIC
VILLAGE APTS



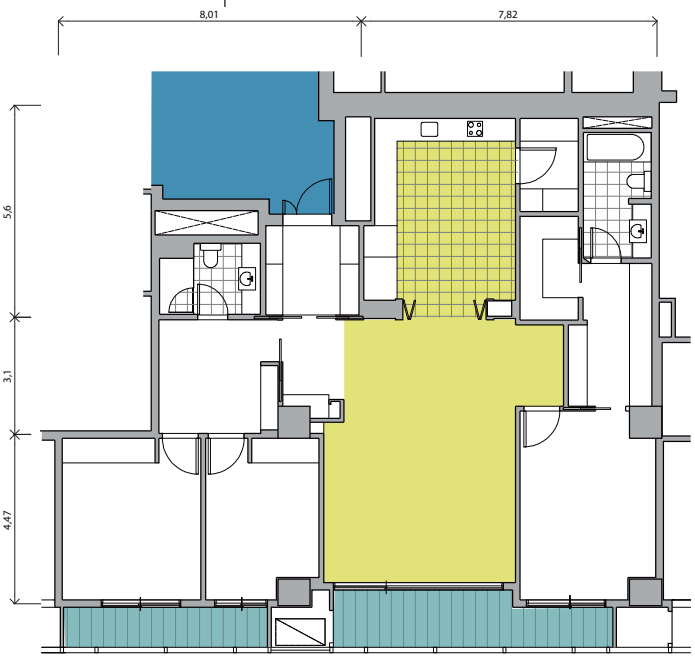
A Type
138 m2



A Type
109 m2



B Type
85 m2



A Type
220 m2

10/ 1993
MAPO
SAMSUNG APTS

11/ 1999
SAMSUNG TOWER
PALACE APTS

12/ 2008
JAMSIL
RICENZ APTS

the disappearance of the corridor and thus of the clear distinction between living and sleeping quarters reflected a different understanding of privacy. This enlarged central space could also be used as a symbolic space for the celebration of traditional rituals in the memory of family ancestors, very common in Korea as non-religious civil practices among Catholics, Buddhists and non-believers alike. There are different types of rituals: those celebrated on major holidays such as the lunar New Year and Chuseok (차례, *charye*); on the death anniversary of a particular ancestor (기제, *gije*); and seasonal ceremonies for ancestors who are at least five generations back, typically on the tenth month of the lunar calendar (시제, *sije*). Ancestor rituals, even in revised form, remain as an important part of Korean culture, are a testament of the social importance of family and are still observed. They are typically held at the eldest son's house, where other members of the family meet. The rites imply the preparation of ritual foods and are performed according to established sequences. The need to arrange props for the ceremony and to accommodate outside members of the family requires a certain dimension of space that only a space such as the LDK could provide[53].

Access was still based on a shared corridor along the northern façade, and all the units on the same floor shared an access core with elevator. The corridor was meant to allow for fortuitous meetings between neighbors, and the relationship between each unit and the corridor was carefully staged through a transitional space: each apartment was raised two steps higher, and there was a small buffer space for the storage of bicycles, shopping carts, baby strollers, etc.

Consolidation of the Typology

From the mid-1970s, technological improvements and additional financing and management capacity allowed for taller buildings, increasing the floor areas and population density of the complexes. Structural improvements were introduced and most buildings were fitted with elevators. These were initially shared by all units, with an open corridor on the north side[54], but later, each elevator was shared by two units per floor. The Apkujeong Hyundai Apartments, a symbol of the emerging private development in Gangnam, are a testimony to the transition from a western layout with separation of day and night quarters to the emergence of the central LDK space, as unit layouts built in the different phases shift from one model to the other. Larger units were built with double cores. The main one included an elevator, and was used by the owners, while the second one provided direct access to the service quarters and the kitchen on the northern façade of the buildings. The unit types which took on the LDK layout introduced in the Yeouido Sibum Apartments did nevertheless improve on it by placing the doors to the different rooms not opening directly to the living room but to small alcoves off it, thus improving privacy. This would also become a common feature from then on[55].

The apartments in the athlete's village built for the 1986 Asian Games introduced enclosed balconies as buffers between the outside and the inside[56]. This feature made a lot of sense, since the region has a very variable climate (with average seasonal temperature variations of 40°C), and very humid summers. There are also other phenomena such as clouds of yellow dust blown in from the deserts of Central China, monsoons and summer typhoons, which difficult the regular use of open balconies. These elements eventually morphed into long, enclosed corridors on both sides of the buildings[57]. Over time they have also taken on other functions, such as storage, drying of laundry[58], and even the preparation of traditional condiments like kimchi that are difficult to accommodate for in western style open kitchens.

These balconies have added yet another level to the articulated floor condition of Korean apartments. As explained earlier, residents take off their shoes and leave them by the door. The entrance area normally has a cupboard for storing shoes, and a step marks the threshold beyond which

53 See Figure 22-35 on page 351.

54 See cases #3, 6 and 7 in Figure 22-30.
55 See Case Study #6 in Figure 22-30.
56 See Case Study #8 in Figure 22-31.
57 See cases #10 and 11 in Figure 22-31.
58 See Figure 22-36 on page 353.

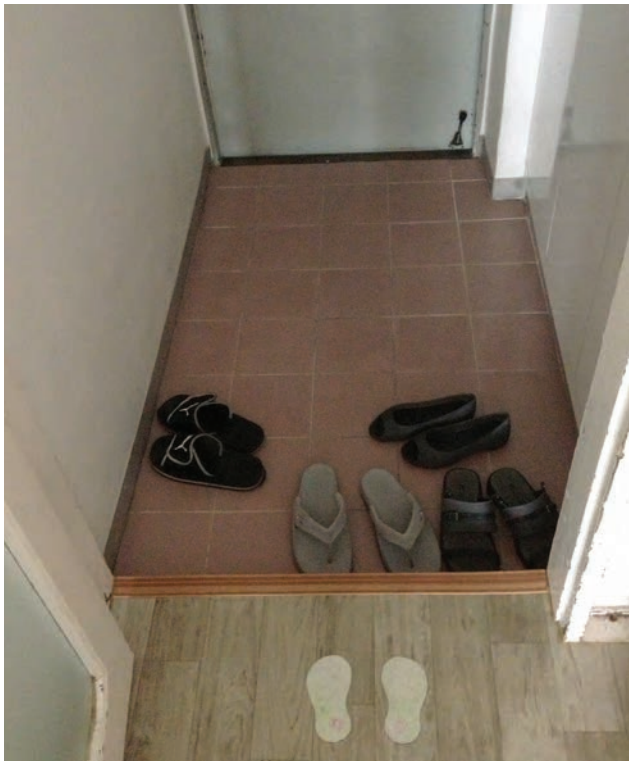


Figure 22-32. View of the entrance, with room to leave the street shoes.
Kyeonnam Apartments, Banpo. Photograph by author.

Figure 22-33. View of the shoe storage space at the entrance.
Kyeonnam Apartments, Banpo. Photograph by author.

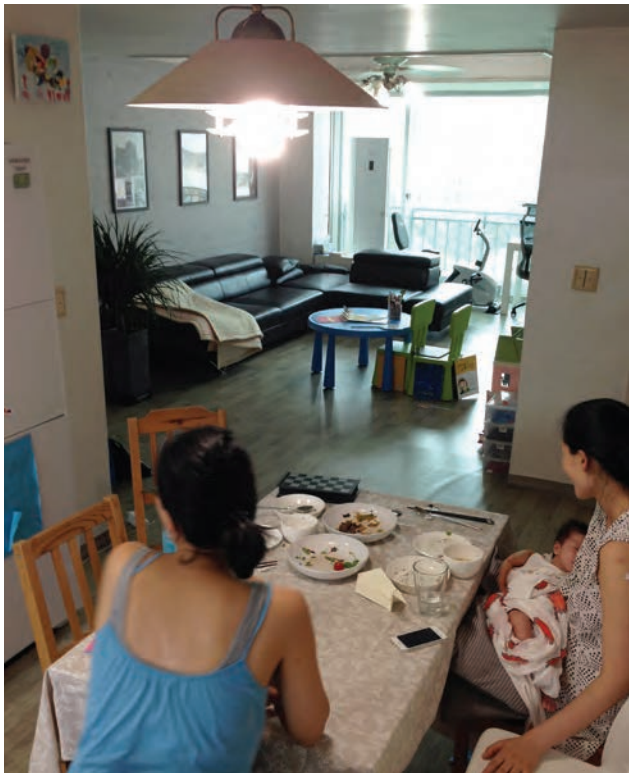


Figure 22-34. View of the LDK space, from the kitchen to the living room.
Kyeonnam Apartments, Banpo. Photograph by author.

Figure 22-35. *Charye* (차례), ancestor ritual being held during a lunar New Year festivity in the living room of an apartment.
Image from https://www.quora.com/Why-is-Christianity-so-popular-in-South-Korea

shoes should not be worn. The height of this step (about 12cm.) conceals the underfloor system that heats the house using hot water, a basic feature of Korean apartments that developed from the traditional hot-air based heating system found in the *hanok*, the traditional Korean home. Neither the external corridors nor the wet areas have underfloor heating, and the extra height is used to create slopes to drain water away. Plastic or rubber slippers are used in these lower, unheated areas[59]. Valérie Guelézeau has called this highly regulated use of shoes inside the house according to territories delimited by differences in level the ´ballet of shoes´ (*ballet des chausures*). According to the author, by preserving the spaces of transition between inside and outside, this characteristic recalls a specifically Korean use of domestic space (Gelezéau, 2003, p. 220).

Variations

When prices were liberalized following the 1997 Asian financial crisis, typologies began to emerge that sought to distinguish themselves from the archetype unit layout in order to be more exclusive. High-density luxury models emerged in the form of tower condominiums. The towers' structural requirements took precedence over all other considerations, so double ventilation was abandoned, bedrooms were often shifted toward the perimeter, service areas were moved toward the center, and the LDK model was gradually abandoned. Certain features have been maintained however, like underfloor heating and the separation between areas where shoes are allowed or not[60]. But the majority of apartments have maintained the nLDK unit plan. An interesting development has been the extension of rooms, mainly the LDK space and bedrooms, over the linear balconies on the southern façade. Balconies do not count as built floor area ratio (FAR) and thus are not contemplated for purchase taxes, but construction companies offer the option in order to increase usable space. This practice effectively institutionalizes a common adaptation by users[61].

59 See Figure 22-37 on page 353.
60 See Case Study #11, Figure 22-31.
61 See Case Study #12, Figure 22-31.

Defining Traits

The defining traits that have prevailed over time and thus define the type are summarized below. They include conclusions from the analysis of floor plans from the Case Studies[62], as well as from the review of articles from the Chutaek magazine[63]:

- South-facing orientation (as opposed to the East-West orientation prevailing in the West) and double ventilation. Double-loaded corridor apartment buildings are thus extremely rare.
- Disappearance of the corridor. Initial plan layouts, especially for larger units, included a corridor from Western influence that acted as buffers between the day and night quarters of the dwelling. With the gradual hegemony of the LDK space as the center of the home, the corridor lost its importance. Bedrooms also were not segregated on one side, but clustered around this central space.
- A more nuanced sense of privacy, since there is no clear boundary between night and day quarters, as a consequence of the previous point.
- An open kitchen, which together with the living room and dining area, forms the center of the house.
- Presence of covered balconies as buffers to the outside. They are used as storage areas, spaces for the arrangement of plants, drying laundry, etc.
- Underfloor heating in the main spaces of the house. That creates level differences with areas that do not require it (terraces, entrance) or wet cores that demand slope for drainage. The level difference at the entrance acts as a physical threshold from which shoes are not allowed in.
- Clear hierarchy among the different bedrooms. The furthest room from the entrance facing south is generally understood to be the master bedroom for the parents, and

62 See chapters 7 to 18 in Volume 02.
63 See Chapter 20 in Volume 02.

Figure 22-36. View of an enclosed balcony, used to dry laundry.
Kyeonnam Apartments, Banpo. Photograph by author.

Figure 22-37. View of lower floor of the bathroom and the rubber sandals to walk in it when it is wet.
Kyeonnam Apartments, Banpo. Photograph by author.

an internal bathroom signals that. It is still called an-bang (안방, *inner room*) as the women's quarters in the traditional Korean houses of the high classes.

- Progressive adoption of plan layouts with two units per floor sharing a vertical core with a staircase and an elevator.
- Optimization of depth and frontage through modular systems according to the size of the apartment (in relationship to the number of rooms). With the increase in height, post and beam structures were replaced by reinforced concrete shear wall systems. Thus, living modules corresponded to structural modules, limiting the flexibility and adaptability of the dwellings over time.
- The related adoption of tunnel formwork construction systems for increased efficiency of the construction process, strength, thermal mass and lower sound transmission implied the homogenization of all the housing types in the same building.
- A striking difference from the Japanese nLDK model and from earlier European existenzminimum types was the increase in floor area since the construction of the Hangang Mansion apartments of 1970. From that moment on, apartments were targeted as well to the growing urban middle class as a means to have access to real estate property.

22.7 CONCLUSIONS: SHAPING SOCIETY BY DESIGNING A STANDARDIZED UNIT LAYOUT

The developmental regime's project to modernize society in connection to economic planning and social welfare was very successful in standardizing the middle class family. The main tools were population policies that effectively reduced the size of households, but also propaganda campaigns that introduced modern, western lifestyles as symbols of status. By pushing lifestyle reform through new technologies of living, a housing revolution took place. Within the twenty years between 1959 and 1980, the residential preference of the South Korean population shifted radically towards apartments, in spite of initial rejection.

The main vehicle for the modernization of living environments and middle class families, the rationalization of housing construction and the emergence of a new domesticity in South Korea was the development of a mass housing type design. The goals were both to improve living conditions but also cost savings through the optimization of construction process. The delay in the modernization of the country meant that there were plenty of technologies, systems and tools that had already been tested and perfected during post-World War II reconstruction abroad. The main influences in the development of the South Korean mass housing unit layout were the minimum dwelling models and standardized layouts developed in Europe in between the wars and mainly the Japanese nLDK system developed by the Japan Housing Corporation after the war; but also traditional, single-storey housing arrangements around central courtyards (*hanok*) and detached housing typologies built after the war that hybridized those vernacular types with western influences through Japanese interpretations.

While initial attempts to mass housing feature a high degree of borrowing from those international precedents, soon a process of experimentation was initiated. One of the most characteristic features of modern western domesticity had been the separation between areas for circulation and spaces for inhabitation as a requisite for privacy.

The emergence of networks of circulation based on corridors and stairs has been identified in England at the turn of the seventeenth century. With them, the house became divided between two domains: public and private, beauty and utility, and form and function (Evans, 1978, p. 70). The corridor became a spatial strategy to differentiate functions and prevent incidental encounters. Modern architecture inherited that division, invested with concerns for hygiene and efficiency. In particular since the development of the *existenzminimum* in the 1920s, the corridor provided privacy and intimacy to the different members of the family and separated the private parts of the home from the public ones. The development of the LDK unit layout in South Korea adopted many features from Western domestic influence, either directly or through Japan: the separation of sleeping quarters from those for eating, the separation of bedrooms for parents and children, the modern kitchen and bathroom, the functional specialization that these features entailed, the progressive adoption of western furniture, etc. Corridors were also adopted as a strategy to separate the common parts of the house from the private ones, and to provide privacy to the different bedrooms. They were not completely new to Korea, since one of the main housing types introduced by the Korea Housing Corporation during colonial times was the Japanese traditional *machiya* ('corridor type') townhouse, based on a central corridor that provided access to all the different rooms[64].

In spite of the adoption of many other western modern domestic features and of existing precedents in Korea, the corridor was progressively discarded in favor of the LDK central space. In so doing, strict Western divisions based on privacy within the house were blurred, catering to a specifically Korean understanding of the domestic domain that harkens back to the traditional courtyard house[65], and speaks of the level of hybridization of the quintessential Korean unit plan.

64 See Figure 20-4 in Volume 02.
65 See Figure 22-17 on page 333.

"To a rationalized, expansionist and at the same time centralized, clamorous, and spectacular production corresponds another production, called 'consumption'. The latter is devious, it is dispersed, but it insinuates itself everywhere, silently and almost invisibly, because it does not manifest itself through its own products, but rather through its ways of using the products imposed by a dominant economic order."

Michel de Certeau (1984) *The Practice of Everyday Life* (Steven Rendall, trans.) University of California Press, Berkeley CA. (pp. XIII)

"Ce qui se passe vraiment, ce que nous vivons, le reste, tout le reste, où est il ? Ce qui se passe chaque jour et qui revient chaque jour, le banal, le quotidien, I'évident, le commun, l'ordinaire, l'infra-ordinaire, le bruit de fond, I'habituel, comment en rendre compte, comment l'interroger, comment le décrire?

Interroger l'habituel. Mais justement, nous y sommes habitués. Nous ne l'interrogeons pas, il ne nous interroge pas, il semble ne pas faire problème, nous le vivons sans y penser, comme s'il ne véhiculait ni question ni réponse, comme s'il n'était porteur d'aucune information. Ce n'est même plus du conditionnement, c'est de l'anesthésie. Nous dormons notre vie d'un sommeil sans rêves. Mais où est-elle, notre vie? Où est notre corps? Où est notre espace?

Comment parler de ces " choses communes ", comment les traquer plutôt, comment les débusquer, ies arracher à la gangue dans laquelle elles restent engluées, comment leur donner un sens, une langue : qu'elles parlent enfin de ce qui est, de ce que nous sommes.

Peut-être s'agit-il de fonder enfin notre propre anthropologie: celle qui parlera de nous, qui ira chercher en nous ce que nous avons si longtemps pillé chez les autres. Non plus l'exotique, mais l'endotique."

Georges Perec (1989) 'Approches de quoi?' In: *L'Infra-ordinaire.*

CHAPTER 23
USER'S TACTICS: THE APPROPRIATION OF DOMESTIC SPACE

This chapter looks at how residents have taken the standardized housing unit within an *apat'u tanji* and adapted it to their needs, in order to outline a contemporary domestic culture specific to the mass housing model.

To do so, it first outlines a conceptual framework by describing George Perec's notion of the *infra-ordinary* as a development of Lefebvre's *everydayness*. It then describes the development of the concept of 'habitat' in architecture and urbanism by the members of the Team X through an awareness for everyday forms of appropriation of space, related to local social, cultural and climatologic specificities. Such awareness was exemplified in the study of informal settlements and their potential as models for contemporary urbanism, in a clear criticism of the functionalist and globalizing agenda of the CIAM.

Based on those precedents, the second part of the chapter looks at the adaptations done to the *apat'u tanji* of Seoul by their residents, at two levels: the scale of the whole complex and the scale of the housing unit.

23.1 GEORGES PEREC: THE INFRA-ORDINARY AS A CRITICISM TO THE BUREAUCRATIC SOCIETY OF CONTROLLED CONSUMPTION

In 1989, French writer Georges Perec wrote the piece *'Approches de quoi?'* within a collection entitled *'L'infraordinaire'*. The short essay reflected upon the value of *'what happens every day and recurs everyday: the banal, the quotidian, the obvious, the common, the ordinary, the infra-ordinary, the background noise, the habitual?'* and the need to question it. Perec coined the terms 'infra-ordinary' (*l'infraordinaire* in the original French) and 'endotic' (*l'endotique*); contrasting them with 'extra-ordinary' (*l'extra-ordinaire*, a key concept in surrealism) and 'exotic' (*l'exotique*) (Perec, 1989).

Perec believed people needed to recover the sense of surprise in the face of reality, and to question the things to which they seemed to have become accustomed, so that they might discover the answer to certain questions: *'Where is our life? Where is our body? Where is our space?'*. He argued that the essential questions were those that seemed trivial and futile, since it was by questioning everyday habits that one could *'speak of what is, of what we are'*. He maintained this attitude throughout his *oeuvre.*

The text also suggested ways to become more aware of those trivial, common matters that formed daily routine, including describing things, making inventories and lists, and comparing them. For Perec, everyday life required systematic, rigorous attention, to the point of suggesting an

anthropology of everyday. The idea of scientifically collecting and classifying apparently banal data to define new structures and creative patterns was a prominent feature in Perec's literary work, and was one of his contributions to the *Ouvroir de littérature potentielle* (Oulipo). The group used constrained writing techniques as a form of inspiration. Perec used classification and mathematical structures not only to describe his surroundings, but also to 'construct' the reality of his works. He referred to such creative structures as 'story-making machines'[1].

His key work – '*La Vie mode d'emploi'* (later translated into English as *Life: A User's Manual*) – marked the culmination of this constrained approach to creativity and was the literary version of *l'Infra-ordinaire* in the way that the lives of people living at the fictitious 11 Rue Simon-Crubellier were interwoven through the meticulous description of their daily lives.

Perec's exploration of the relationship between everyday life and the urban space was part of a post-World War II tradition of critical resistance initiated by Henri Lefebvre in his *'Critique of Everyday Life'*[2]. Lefebvre was also one of the main influences behind the May 68 events in Paris, which questioned France's capitalist system. After the May 68 protests, Perec began writing *'Lieux'*, (Places) an urban *dérive* project that was supposed to take place over a period of 12 years, during which he would write his memories of 12 places in Paris before going there and actually describing them[3].

In *'The Practice of Everyday Life'* (originally published in French in 1980 as *'L'Invention du quotidien. Vol. 1, Arts de Faire'*), Michel de Certeau developed a theory on the production and consumption that is inherent in everyday life. It is a development of Lefebvre's dialectic definition of everyday life as a balance between repression by regulatory apparatuses (*strategies*) and the creative, opportunistic, unconscious resistance of ordinary citizens (*tactics*). Certeau's work was a direct response to Michel de Foucault's book *'Discipline and Punish: The Birth of the Prison'*[4].

23.2 THE INFRA-ORDINARY IN ARCHITECTURE AND URBANISM

The appearance of the ordinary in architectural discourse was related to the criticism of the functional urban planning of the CIAM, as well as to what Lefebvre called *'bureaucratic society of controlled consumption'*. Specifically, its origins can be found in some of the Team X proposals at the CIAM IX in Aix-en-Provence, in 1953.

As we have seen, one of the main aims of CIAM IX was to produce a revised version of Le Corbusier's 1943 *'Charte d'Athènes'*, to be called *'Charte de l'Habitat'*, which would reconsider the future of modern urban planning. It was the first CIAM in which a clear rift developed between the old guard (represented by Le Corbusier, Josep Lluís Sert, Walter Gropius and Sigfried Giedion, among others) and a new generation (Aldo van Eyck, Jaap Bakema, Georges Candilis, Shadrach Woods, Theo Manz, Rolf Gutmann and the Smithsons, among others). This young generation, which would go on to form Team X, criticized the institution for the universalist aims of its solutions and the functional hierarchy it used in dealing with the city. The decision to discuss the concept of habitat at CIAM IX was enough on its own to change the way cities were conceived, incorporating sociological and cultural criteria.

The conflict between two ways of understanding urbanism came about as a result of the presentation of three urban development studies at the congress, known as *'grids'* (or *'grilles'* in French, based on the graphical format proposed by Le Corbusier at CIAM VII[5]). The *'GAMMA Grid'* (*Groupe d'Architectes Modernes Marocains*, by Michel Ecochard, Pierre Mas and others) was a study of everyday life in informal settlements on the outskirts of Casablanca[6]; the *'Mahieddine Grid'* (by Roland Simounet and others) analyzed

1 See Figure 23-1 on page 359.
2 See '21.4 Henri Lefebvre And Everydayness' in Chapter 21, Volume 01.
3 See Figure 23-1 on page 359.
4 See '22.1 Modern Architecture and Urbanism as Mechanisms of Control of The Modern State' in Chapter 22, Volume 01.
5 See Figure 22-1.
6 See Figure 23-2 on page 361.

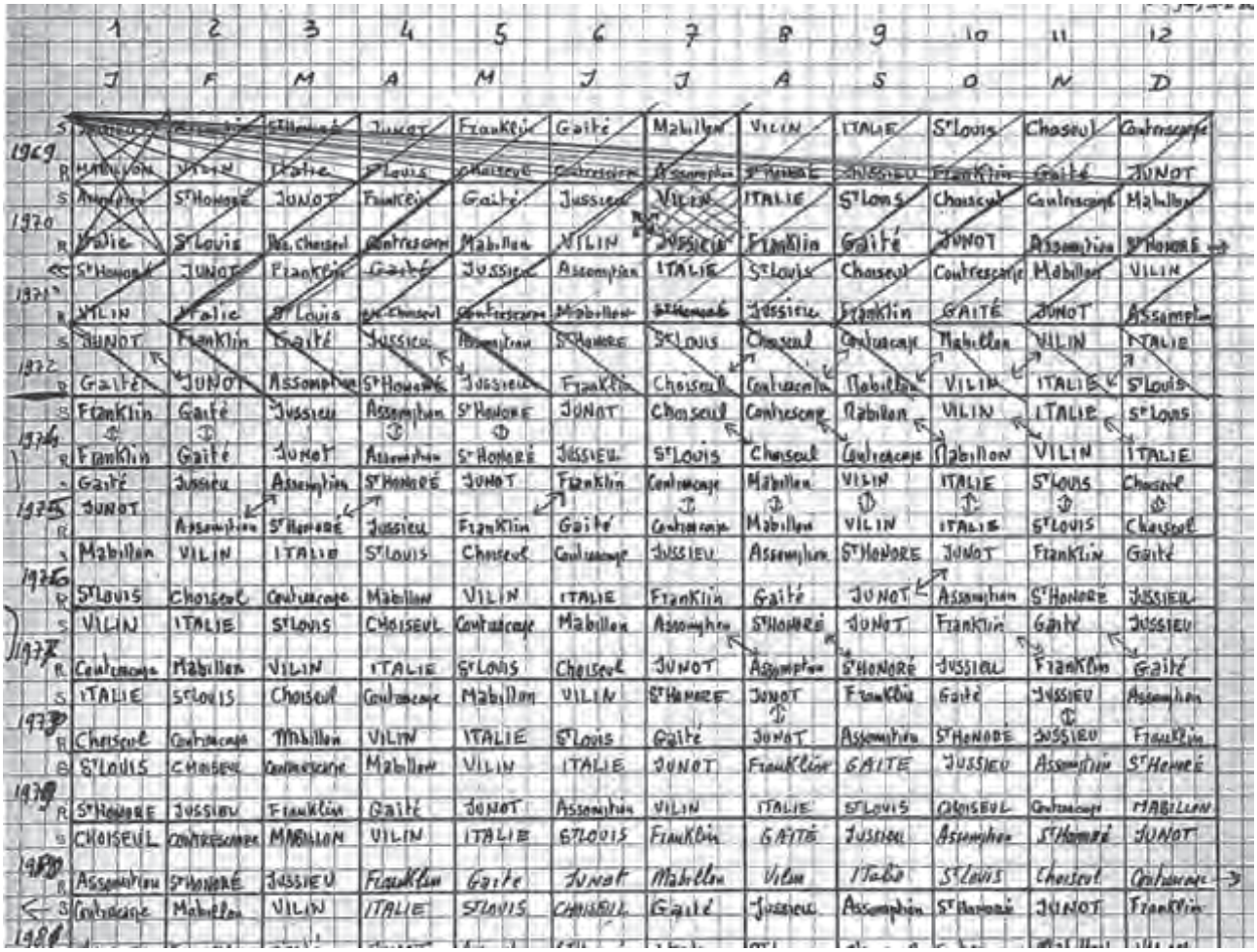


Figure 23-1. Georges Perec: grid for the unfinished project 'Lieux'.
The grid linked twelve places in Paris with the twelve months of the year over twelve consecutive years (1969-1981), and structured both the narrative and the work of the author.
The use of the orthogonal grid system as a creative resource harks back to the CIAM grids proposed by Le Corbusier, as seen in Figure 22-1 on page 315.

an informal settlement in Algeria; and the *'Urban Re-Identification Grid'* (by Alison and Peter Smithson) was a study of the forms of appropriation by children playing in the streets of Bethnal Green, a working-class district in London's East End[7]. All three studies presented everyday contexts to explain different degrees of privacy regarding the concept of habitat. The debates that arose regarding the possible role of these informal models in the design of the modern city sparked a generational conflict that led to the dissolution of the CIAM (von Osten, 2009; Bosman, 2005).

The younger members' criticism of the universalist methods of CIAM was demonstrated by their refusal to use the CIAM grid described in subchapter '22.1 Modern Architecture and Urbanism as Mechanisms of Control of The Modern State'[8]. The grid assumed that the functional city categories used were applicable to a wide range of situations. As a frame of reference, it led architects and urban planners to think about the city strictly from the perspective of the four functions and the other pre-established categories on the horizontal axis, and to ignore any other factor that did not fit into this system. That is why the grid was branded as universalist and exclusive.

Although the criticism and revision of the functional approach of the *Charte d'Athènes* and the ensuing alternative proposals were contemporary with the adoption of mass housing policies by East Asian developmental regimes, criticisms were ignored and those regimes focused instead on adopting the functionalist principles of the most technocratic form of modernism. This was because mass housing in these new contexts was adopted for very different reasons than in the West, despite evident formal similarities. For this reason, although the Modern Movement has become a universal formal language, to the extent that some suggest that today's globalized cities share a common history (von Osten, 2009), the underlying political and economic meanings and social aspirations behind these forms vary greatly, depending on the context[9]. Since modernization and urbanization in East Asian developmental economies have followed very different courses to those followed in the West, they should be analyzed from their own perspective[10].

7 See Figure 23-3.

8 See Figure 22-1 on page 315.

9 See sunchapters 2.1 and 2.2 in Chapter 2, Volume 01.

10 See '2.1 A Different Perception of Mass Housing in South Korea And in the West', in Chapter 2, Volume 01.

Figure 23-2. Michel Ecochard and Pierre Mas (Groupe d'Architectes Modernes Marocain): *'GAMMA Grid'* and detail.
Presented at the CIAM IX in Aix-en-Provence, in 1953.
Based on studies of the conditions of the workers' slums in the outskirts of Casablanca, the grid aimed at providing better living conditions. The work of the GAMMA remained controversial nevertheless, due to the instrumentalization by the authorities, who seeked to control slum dwellers.

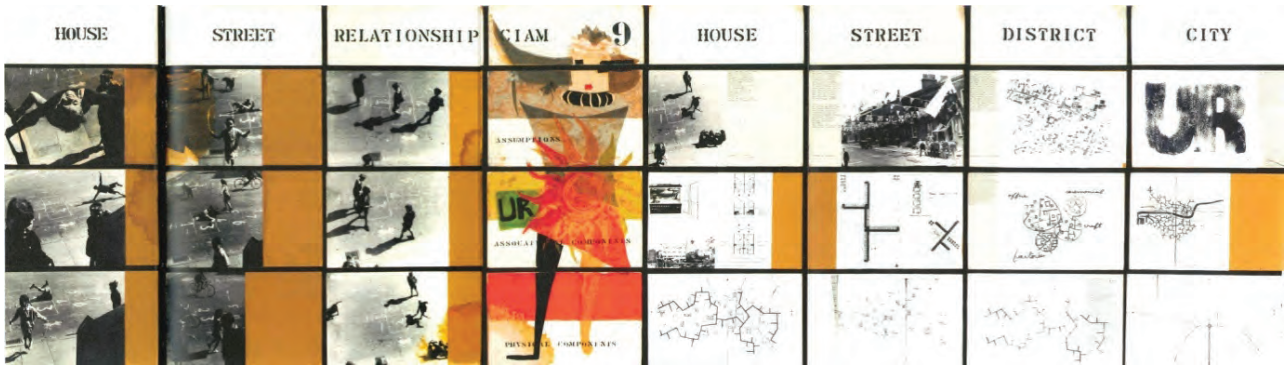


Figure 23-3. Alison and Peter Smithson: *'Urban Re-identification Grid'* and detail.
Presented at the CIAM IX in Aix-en-Provence, in 1953, the grid was in fact an alternative to the official one.
Instead of containing the four urban functions stated in the Charte d'Athènes, it introduced what would become the scales of association described in the Statement on Habitat - see '21.2 'Habitat' as a Dialectic Complement to the Functional City' in Chapter 21, Volume 01. The Smithsons worked with photographer Nigel Henderson to produce a visual document which sought to define an architectural equivalent to the intuitive spatial connections they saw in children's games in poor areas of London.

23.3 DWELLER'S TACTICS IN SEOUL'S TANJIS: CASE STUDIES

In 1969, architect Philippe Boudon published a research on the transformations the residents of the 'Quartiers Modernes Frugès', a housing project in Pessac near Bordeaux designed by Le Corbusier, had undertaken over the forty years since the project had been completed. The goal was to *'cast light on specific aspects of 'living' and clarify the relationship between the architect's original conception and the residents' reactions'* (Boudon, 1972, p. 2). While the original title in French read *'Pessac de Le Corbusier 1927-1967. Étude socio-architecturale'*, the title of the English translation was more eloquent: *'Lived-in Architecture. Le Corbusier's Pessac Revisited'*. In the preface, Henri Lefebvre succinctly described the approach of the research and took the opportunity to define the act of living as a productive activity rather than a form of passive consumption:

> *"Some forty years ago, at Pessac near Bordeaux, the most celebrated architect and town planner of modern times, […] built a new settlement – the Quartiers Modernes Frugès. What was Le Corbusier trying to do at Pessac? By building in a modern style and by taking due account of economic and social problems he hoped to produce low-cost houses that would be pleasant to live in; he wanted to provide people with a container, in which they could install themselves and live their daily lives; in his dual capacity as architect and town planner he wanted to create a functional system based on technological criteria; and to this end he set out to design predetermined, homogeneous and essentially cubist structures, in which open and closed areas would complement one another.*
>
> *This was what Le Corbusier wanted. But what did he actually achieve? […] Le Corbusier produced a kind of architecture that lent itself to conversion and sculptural ornamentation. And what did the occupants do? Instead of installing themselves in their containers, instead of adapting to them and living in them 'passively', they decided that as far as possible they were going to live 'actively'. In doing so they showed what living in a house really is: an activity. They took what had been offered to them and worked on it, converted it, added to it. What did they add? Their needs."*
>
> (Lefebvre, 1972, pp. i-ii)

This second part of the chapter will look into the adaptations residents of *apat'u tanji* in Seoul have done to their living environments in order to cater to their needs, and thus to live 'actively'. The present subchapter will address adaptations at the scale of the whole *apat'u tanji*, based on the findings from the Case Studies in Chapters 7 to 18, Volume 02[11]. The last part of the chapter will address adaptations to the housing units, based on interviews to the residents.

At the scale of the complex, two main groups of adaptations can be found: physical changes to the building form (changes in the 'hardware'), and changes in the way these physical spaces were meant to be used ('software').

1. Physical changes

a. Renovation of the units.

Renovating the interior of the units is the most common physical transformation undertaken in *apat'u tanji*, as a consequence of the high level of standardization of apartment unit types. There are different degrees of renovation: a new tenant moving into a rental unit will typically change the wall paper at least, in order to have a clean start. Korean people do not paint the interior of their homes and prefer instead to wallpaper them. More extensive renovations take place in older *tanji* in order to modernize bathrooms and kitchens or for aesthetic reasons, especially in cases of home-ownership. This has generated a whole apartment interior design industry. Renovating an apartment is also a way to increase its value.

The interior transformations that had taken place in the original Mapo Apartments over the years

11 See Figure 23-5 and Figure 23-6.

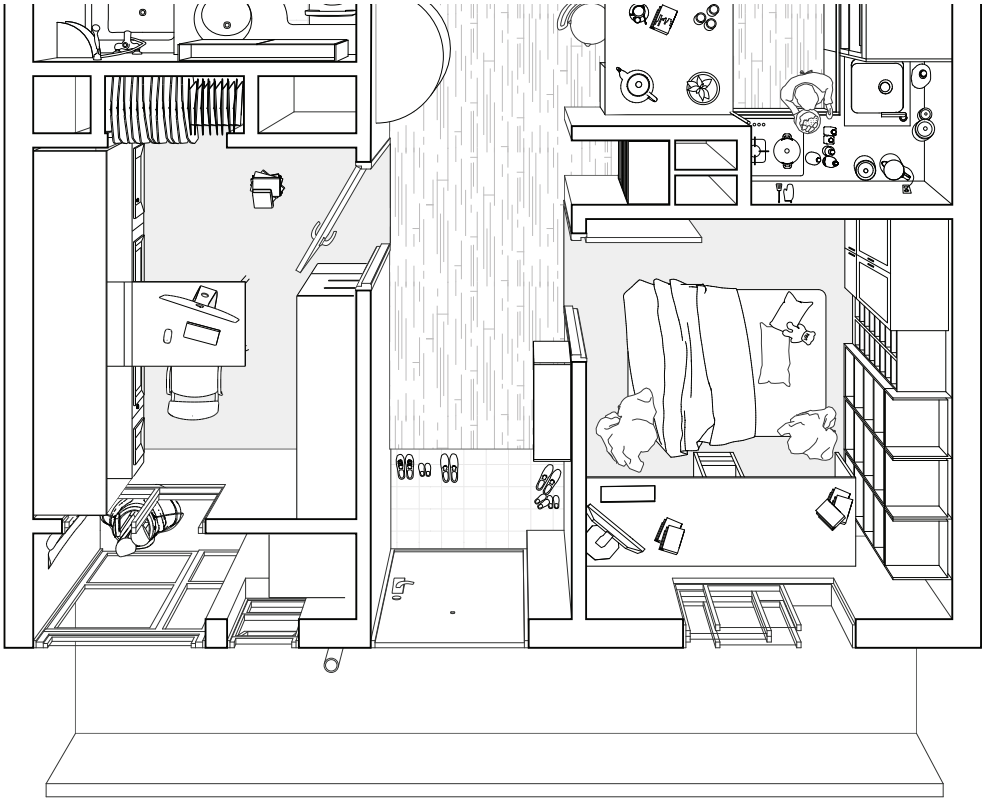
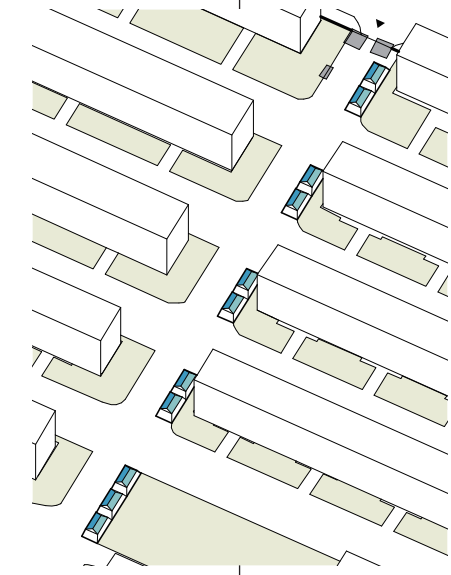


Figure 23-4. Adaptation of a unit in Namsan Town apartments.
The residents opened a second door to the common corridor, transforming a buffer space in between the corridor and one bedroom into a storage space so they can keep large objects such as bicycles or washing machines. The door in the centre is the original one, and the one to the left with a glass pane is the new one, as made evident by the different design from the one in the next unit. In this case, approval by the community board was needed. Image by author.

Figure 23-5. Synthesis of adaptations by residents from the Case Studies in Volume 02 (I).

Matrix of transformations of units in Mapo apartments. From Kim, S-S: *'A Study on the Interior Transformation of Mapo Apartment Houses'* (1991).

Transformation of units

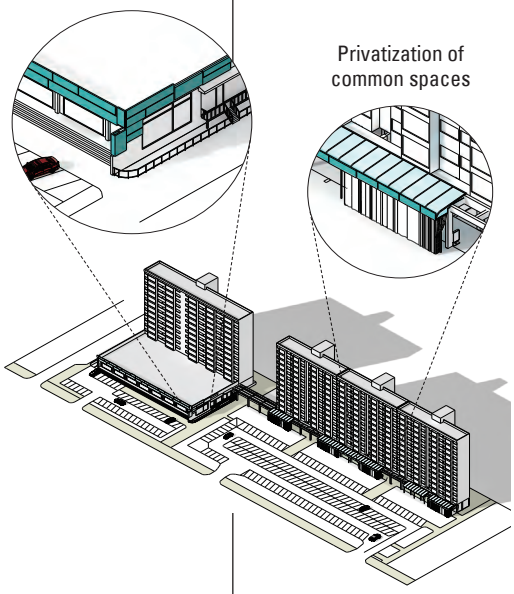


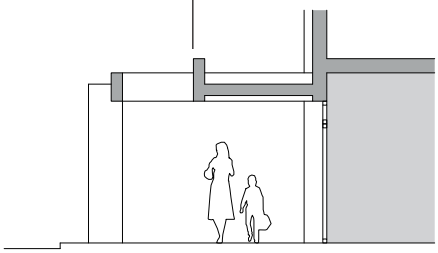
Weekly temporal market housed in temporal structures located along the main roads of the complex. Photograph by author.

Apat'u tanji pop-up market

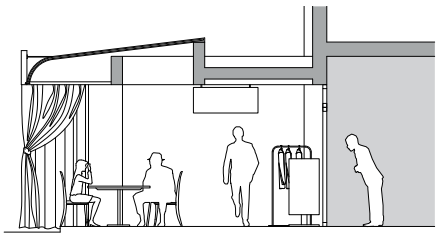
Appropriation of exterior surfaces for advertisement and to open new commercial frontages

Privatization of common spaces





Original design of pedestrian pergola



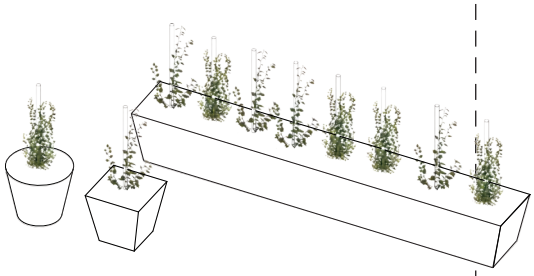
Extended commercial uses

Extension of commercial activities onto common spaces

01/ 1962
MAPO
APARTMENTS

02/ 1970
HANGANG MANSION
APARTMENTS

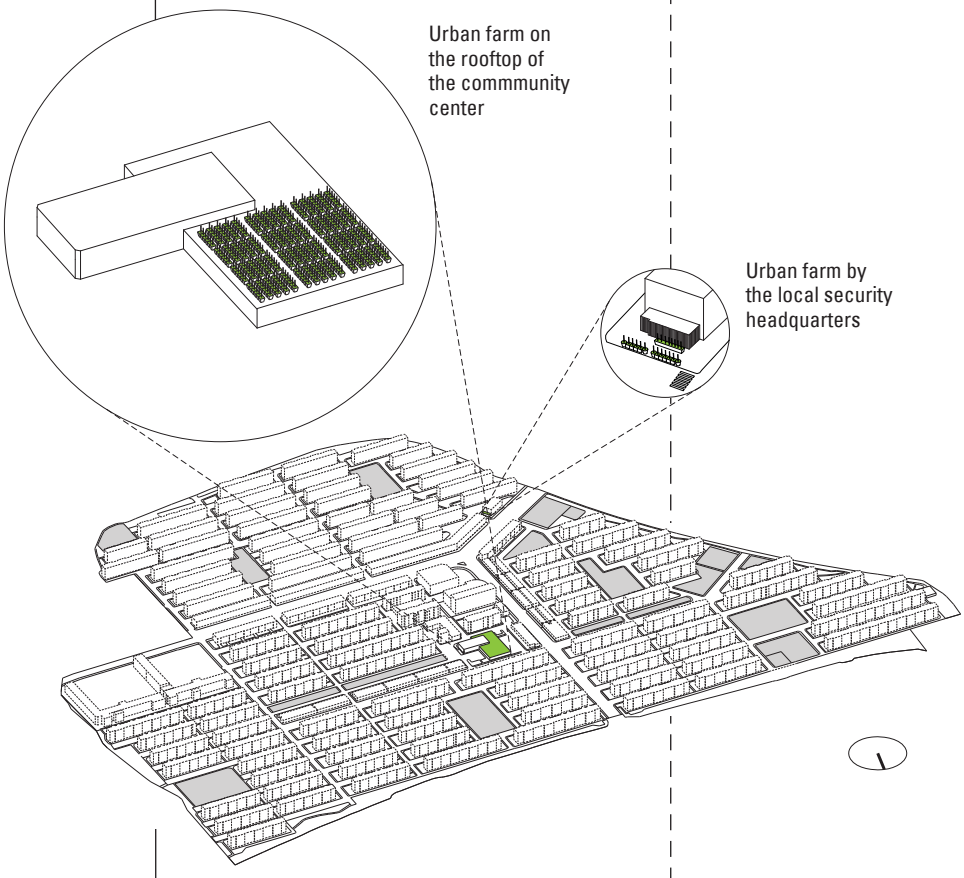
03/ 1970
YEOEUIDO SIBUM
APARTMENTS



Orchards in planters

Urban farm on the rooftop of the commmunity center

Urban farm by the local security headquarters



Urban farming on top of community centers

04/ 1972 BANPO APTS

05/ 1975 JAMSIL 2-TANJI APTS

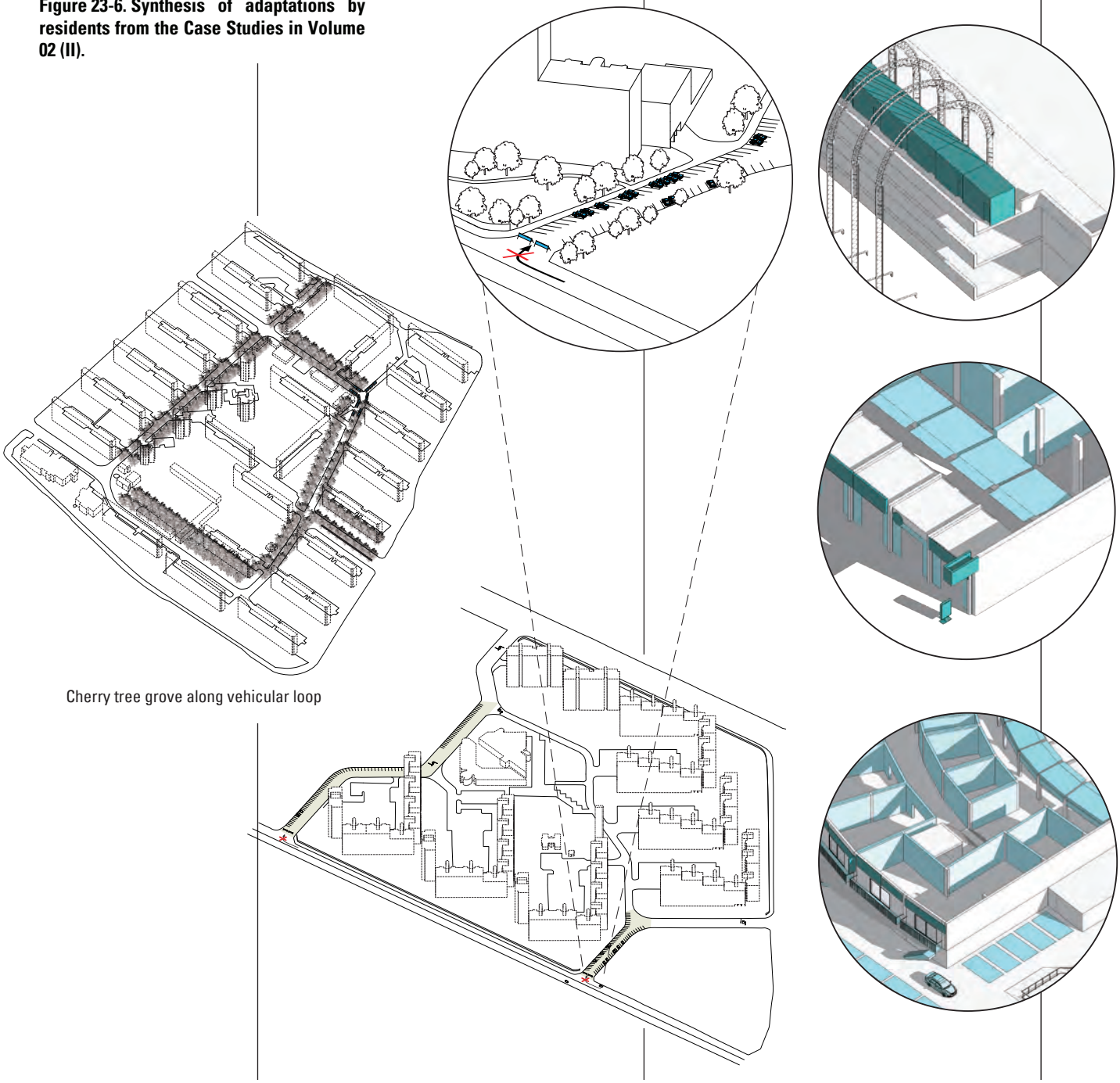
06/ 1975 HYUNDAI APKUJEONG APTS

07/ 1983 JAMSIL 5-TANJI APTS

1975

1980

Figure 23-6. Synthesis of adaptations by residents from the Case Studies in Volume 02 (II).



Cherry tree grove along vehicular loop

Seasonal cherry blossom festival

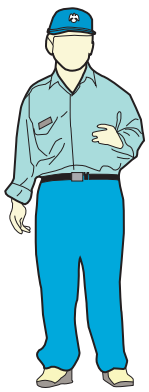
Occupation of public street for residents' parking

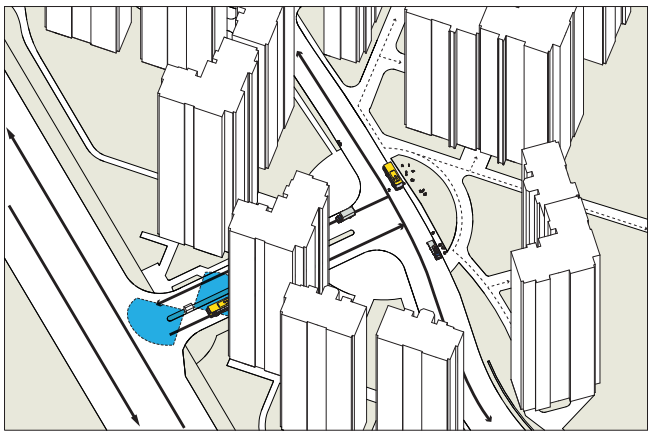
Densification of commercial areas to increase retail space

07/ 1983 JAMSIL 5

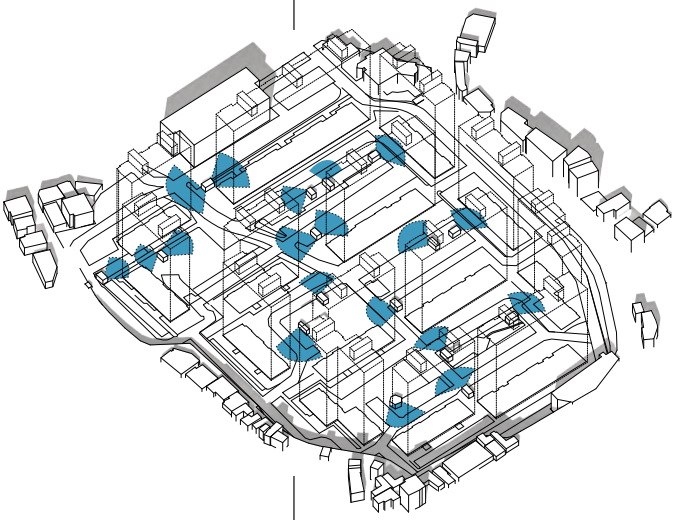
08/ 1985
ASIAN ATHLETIC
VILLAGE APTS

09/ 1986
OLYMPIC
VILLAGE APTS





Designated pick-up / drop-off points inside the complex for the minibuses from the private after school institutions



Location of security booths within the complex

Security guards as jacks of all trades

Standardized delivery vehicles

Home delivery logistics

10/ 1993
MAPO
SAMSUNG APTS

11/ 1999
SAMSUNG TOWER
PALACE APTS

12/ 2008
JAMSIL
RICENZ APTS

were the subject of a study (Kim, 1991) based on Philippe Boudon's research before the complex was demolished in order to be renovated[12]. The renovations of housing units reflect the changing tastes of residents, an increasing awareness of the role of design in home-making, the economic level of the owners, and the perceived status of a particular housing estate, as highly regarded *apat'u tanji* would be less prone to undergo modifications in order to maintain their value[13].

b. Increase of commercial area

The provision of commercial activities in *apat'u tanji* is a conflictive one: on the one hand, they are supposed to enjoy a certain level of autonomy -especially in those originally built far from consolidated urban areas-, but on the other hand *tanji* are meant to be primarily residential areas and other uses are discouraged. This tension has allowed for a whole range of situations that balance the provision of basic needs with the economic possibilities of the space available:

- Apartment markets: weekly temporal installation of vendors in underused areas of the tanji or parking lots[14].
- Informal extension of business which privatize the use of common areas for private profit[15].
- Densification of existing retail areas[16].
- Appropriation of exterior surfaces for advertisement and to open new commercial frontages[17].

The group Motoelastico developed the concept of 'borrowed city' in order to explain this particular understanding of space as a commons in Seoul. They described the concept as:

> *"the way private citizens use public space for their own personal benefit.*
>
> *[…] In the "negotiated" environment of Asian metropolis, and in particular in Seoul, people "borrow" public space intensively and use it for their private benefit. It doesn't matter how long they do it, few hours or semi-permanently, but once the exploitation period is over, they return the space to its original conditions.*
>
> *The local community often approves (or does not oppose) the temporary use of the public space by some of his members. Doing so, it allows all the other members to do the same. It is a collective agreement done in sake of everyone's private interest.*
>
> *[…] Commercial venues offer the largest variety of street exploitation strategies. They include extension towards and along the street (using the sidewalk and all visible building surfaces as display areas), time-based pop-up stores (most of them tent food stores) and movable shops (cart and movable selling vehicles)"*
>
> (Bruno, Carena & Kim, 2013).

c. Urban farming for the elderly

A symptom of the growing importance of the aging of population and of the maintenance of traditional ways within modern apartment estates is the provision of community gardens and urban farms for retired citizens, usually related to community centers and other social institutions. They occupy underutilized areas within the *tanji*[18].

2. Modification of rules of conduct

d. Dealing with the lack of parking

Parking requirements in older *apat'u tanji* often do not cope with contemporary demand, as economic growth has increased private vehicle ownership dramatically in the last decades. The conflict between the use of valuable open space for either parking or as green area has been one of the main drivers in the evolution of the internal structure of *tanji*. This conflict has been dealt with a series of tactics which, over time, have become an accepted common practice and thus regulated and managed:

12 See Case Study #1 in Figure 23-5.
13 See Domestic Interview #1 in Chapter 21, Volume 02.
14 See Case Study #2 in Figure 23-5.
15 See Case Study #3 in Figure 23-5.
16 See Case Study #9 in Figure 23-6.
17 See Case Study #3 in Figure 23-5.
18 See Case Study #4 in Figure 23-5.

Figure 23-7. Occupation of a playground to park cars.
Jamsil 5-tanji, Case Study #7.
Photograph by author.

Figure 23-8. Double parking lane.
Yeoeuido Sibum apartments, Case Study #3.
Photograph by author.

- Occupation of green areas or even playgrounds for parking[19].
- Double parking: car owners leave the hand brake off so double-parked vehicles can be pushed by the drivers of the blocked cars in order to get out[20].
- Occupation of adjacent streets for resident parking[21].
- It is common practice to have the phone number of the owner visible on top of the dashboard so they are easy to contact in case their vehicles are blocking others.
- Parking spaces are such an asset that tanji have had to develop strategies to prevent outsiders from parking inside: traffic barriers, magnetic cards, security guards, etc.

e. Overcoming the lack of services / amenities

Due to the mono-functional nature of tanji, residents depend on the provision of services from outside. This has facilitated the emergence of a rich variety of systems for the delivery of goods and amenities (배달), and even people:

- Food delivery culture has developed exponentially in South Korea due to the combination of accelerated socio-demographic changes (radical changes in family structure, incorporation of women to the work force, increase of single-person households, etc.) which have resulted in people not cooking large meals, together with the increased convenience of delivery services with the implementation of smart phones and internet-based applications. Even global franchises like McDonalds are forced to provide home delivery if they want to remain competitive in the aggressive Korean market. Nowadays in Seoul, one can get food delivery while sitting in a bench in a public park[22].
- The delivery of other goods in general has also seen vast improvements due to the advancement of mobile phones with GPS devices and increased logistics coverage. One specific industry developed alongside *apat'u tanji* is the moving business due to the fast rate of change of residency. They use a special extension ladder/lift system that allows them to haul furniture and packages out of the windows[23].
- A particular form of transport is that of children going to kindergarten, school or afterschool activities. Dedicated mini-buses are sent by the different institutions to safely collect customers at designated meeting points within the housing estates where parents wait to deliver and pick them up.

f. Security guards as jacks of all trades

Surveillance tasks in *apat'u tanji* have been typically taken care of by untrained, retired men. Their job is not considered a real profession, but a honorary occupation assigned on the basis of merit, favor, or personal connections. Their Korean denomination is *gwalli ajeosshi* (관리아저씨 – literally, 'management uncle'), a wide umbrella which implies that, beyond their official task of guarding the complex, they are also expected to perform as general purpose handymen, cleaners, gardeners, porters, keepers of deliveries, garbage managers, parking assistants and even valets in some cases[24].

In spite of their wide range of responsabilities, the working conditions of security guards tend to be precarious. A month-long survey carried by the Wonjin Institute for Occupational and Environment Health (WIOEH) in September 2014 found that the average age of the 152 guards interviewed was 66.2 years (Seo, 2014). According to a 2010 report by the Ministry of Employment and Labor, their earnings are just above the minimum wage of 1.2 million won (around 1,100 US$) (Choi, 2017). But they are not protected by the Labor Standards Act, which limits long working hours, and thus endure 24-hour shifts (Seo,

19 See Figure 23-7.
20 See Figure 23-8.
21 See Case Study #8 in Figure 23-6.
22 See Case Study #12 in Figure 23-6.
23 See Figure 23-9.
24 See Case Study #10 in Figure 23-6.

Figure 23-9. Moving truck with a special extension ladder/lift system that allows movers to haul furniture and packages out of the windows.
Asian Athletic Games Village, Case Study #8.
Photograph by author.

Figure 23-10. Community housing revitalization project event in Jamsil 5-tanji, in occasion of the Cherry Blossom Festival.
Photograph by the Songpa district office, http://chief.songpa.go.kr/user.kdf?a=songpa.act.gallery.ActionPhotoesApp&c=1002&code=02&photo_no=8024&event_no=2070&cate_id=BI0301000000#

2014). Their job is categorized as 'surveillance labor' and is not eligible for paid vacations or national holidays, and there are no legal measures to enforce break hours during the long shifts. They do not have a labor union to protect their rights and are easily fired (Choi, 2017). The survey by the Wonjin Institute for Occupational and Environment Health also found out that 69.4% of the interviewees declared having been abused verbally by residents or visitors (Seo, 2014).

g. The tanji as an amenity for the surrounding neighborhood

Depending on their location within the city – whether they are located in broader apartment districts or surrounded by traditional, low-rise fabrics, etc.-, *apat'u tanji* are used by the surrounding communities in a variety of ways:

- By providing much needed green spaces, playgrounds and other leisure facilities, since the biggest difference mass housing estates in Seoul offer in regard to the rest of the city is the ratio of open space. While of course it is meant to be only for residents, different *tanji* show different levels of scrutiny and they are rarely fully gated, which means there are always ways for people from the neighborhood to come in. A particular case is the grove of Japanese cherry (*prunus serrulata*) that surrounds the vehicular loop in Jamsil 5-tanji (Case Study #7). During the cherry blossom season (between April and May), the blossoming attracts numerous visitors and even a festival is organized to celebrate the occasion[25].
- The commercial facilities in a tanji may also provide not only for residents, but also for the extended community around them. This is specially the case in tanji that colonized new territories that had not been urbanized before, and where commercial buildings are located at the periphery, as in the case of the Hangang Mansion Apartments (Case Study #2). A particular case is the commercial facilities in Yeouido Sibum apartments[26], which initiated the development of Yeoeuido Island. When the skyscraper known as 63 Building (63 빌딩) opened across the street as a landmark for the 1988 Summer Olympics, the many employees of its financial companies generated a huge demand for restaurants, and thus overtime the commercial facilities of the tanji were refashioned to function as a large food court for them.

25 See Figure 23-10.

26 See Case Study #3 in Figure 23-5.

"To become familiar with the gestures of every day in all their hidden details, we thought of collecting from women of all ages and backgrounds, long interviews built on a rather flexible schema in order to allow comparisons without obtaining stereotyped responses. We hoped to see confidence appear in the dialogue so that certain things would be on the tips of their tongues, memories, fears, reticences, everything that usually remains unsaid about knacks for doing things, decisions, and feelings that silently preside at the accomplishment of everyday practices. This way of 'giving the floor' to ordinary people corresponded to one of the main intentions of the research, but in collecting the interviews, the interviewer needed to give consideration without directing and to have an uncommon capacity for empathy."

Luce Giard, (1998) 'Introduction to Volume 1: History of a Research Project'. In: *The Practice of Everyday Life. Volume 2: Living & Cooking.* De Certeau, M., Giard, L., & Mayol, P. (J. Tomasik, Trans.) Minneapolis, MN: The University of Minnesota Press.

"Occupying a building means interpreting it – adjusting, modifying, transforming, selecting, rejecting. Analyzing the diffuse and dialogic collaboration between the architect and the occupants (both current and former) offers valuable insights for the discipline of architecture. Designing inhabited spaces means defining the relationship between a domain left to interpretation and a domain thought as permanent.

[...] A study of domestic interiors provides valuable information on issues that are critical to the future of architecture.

[...] a vernacular architectural culture, characterized by transformations made by occupants, can be observed in a domestic context. It is, however, little documented or analyzed - once construction is complete, it seems that buildings no longer open their doors.

[...] Naming and assembling the elements of a culture that is specific to the practice of inhabiting allows us to reveal the invisible dynamics of our familiar built surroundings. Beyond words, the figures become architectural operators. The study vouches for the usefulness of these vernacular practices in designing architectural projects that are devoid of any unifying or planning ideology, and lays bare a background process of "becoming" which stands in relation to the specific local environment."

Lafore, B., Levy, S., Martinez Barat, S., & Berger, M. (2014) *'Intérieurs. Notes et Figures / Interiors. Notes and Figures'.* Catalogue of the Belgian Pavilion in the 14th Venice Architecture Biennale. (F. Delcor Ed.) Bruxelles: Éditions de la Féderation Wallonie-Bruxelles

23.4 DOMESTIC INTERVIEWS

As a conclusion of the Domestic Interviews[27], this section focuses on specific issues in regards to living in *apat'u tanji* from the point of view of the inhabitants. The goal of the interviews was not to so much to collect data that was conclusive or even representative – that would have required a much more expansive effort and was not the scope of the thesis-, but to give voice to the residents and to convey a sample of how they saw themselves and their ongoing act of inhabiting. Beyond the norm and the rule, the aim was to offer a glimpse of the vernacular culture of inhabitation developed as residents have interpreted the apartment lifestyle and in particular the standardized nLDK unit layout in order to adapt it to their needs.

The interviews were based on the belief that the act of inhabiting, which should be considered as part of the residential project, begins only after the building is completed, the units are rented out or sold, and residents close the door of their apartments behind them. Michel de Certeau believed residents were not passive consumers but active producers by way of their tactical, everyday practices. By providing access to the private life of the occupants, the thesis claims that housing is more a process than a product, an action rather than an object.

Interviews were framed by a fixed set of questions divided in different categories: basic data, lifestyle, residential itinerary, the scale of the tanji, and the scale of the unit; so a comparison could be established across the three[28]. Nonetheless, priority was given to making interviewees feel comfortable to develop their own course of thought spontaneously, and questions were meant as conversation starters rather than as a strict survey to be simply ticked off.

1. Residential itineraries

Two main aspects are relevant from the residential itineraries:

a) The shift towards apartments as the predominant residential choice over the lifetime of the interviewees:

Cho – *"When I was young I lived with my parents in both a traditional urban hanok and in a modernized one, in Bukchon."*

Lee – *"When I was young and living with my parents and siblings, we used to live in a small detached house. As I grew up, I progressively ended up living in apartments. […] I have lived in 8 different homes during my life, which means a change of residence at an average of 6 years. I remember very well each different period."*

Kim – *"Throughout my life I have lived in nine different homes. […] Both me and my husband have always lived in apartments, and thus have no experience in any other type of housing."*

The eldest interviewees were both born to families living in detached houses, and have thus experienced the transition to apartments as part of the modernization process of the city. The youngest interviewee is part of a generation born when apartments were much more predominant and thus has never lived in a different housing type. The case of Mrs. Lee is particularly interesting due to the wide variety of housing options and locations within the city she has experienced, and bears witness to the many difficulties the middle class has endured in its quest for housing. Mr. Cho is quite a special case since he lived abroad for a long period of his adult life.

27 See Chapter 21 in Volume 02.
28 See sample interview in Appendix 3, Volume 02.

b) The fast rate of change of residence

If we leave Mr. Cho aside as he has lived in a detached house of his property abroad for twenty-five years, the other two interviewees have changed residency at an average of 6.3 and 4 years respectively. Besides reasons of change of address due to marriage and work, the main other reasons for moving were displacement due to residential renewal projects (through Joint Redevelopment processes[29]), the improvement of living conditions, and the purchase of a home. Another common motive for changing residence in Seoul is to gain access to one of the prestigious school districts. These school districts are one of the main drivers of prices of apartments, but this fact did not happen to be voiced as a matter of concern during the interviews.

In spite of these frequent changes of residence and of the fact that Seoul is a big metropolis –or perhaps because of it-, the three cases highlight the weight of family ties in choosing the area of residence and the preference to remain in it in order to maintain social networks.

2. Advantages of apartments

Cho – *"The advantages of living in an apartment are the level of conveniences and security they provide, but at the expense of not having your own garden. If I were to choose, I'd rather live in a detached house and enjoy my own garden, even though it has its own inconveniences, like having to plow the snow."*

Lee – *"The main advantages of living in an apartment are its conveniences, in terms of security, management, the collection of garbage, parking, the common facilities, maintenance, etc. Apartments are modern because they make your life easier."*

Kim – *"I think apartments are modern and well adapted to the Korean lifestyle. Living in an apartment is easy to manage, convenient and well organized, as many things are taken care by the management. […] any other type of living arrangement would not be as comfortable and would probably have maintenance and security issues."*

There is a strong consistency in all three cases towards the convenience of living in apartment complexes. In fact, the terms 'convenience', 'security' and 'maintenance' were used in almost all of the interviews, together with the belief that those characteristics are what makes apartments 'modern'. This argument is part of a well-established narrative constructed and spread by the Korean Housing Corporation (KHC) since the beginning of the 1960s through initiatives such as the '주택 (*chutaek*) House & Home' magazine and the Housing Center in downtown (대한주택공사주택센터)[30]; together with other related arguments such as the widespread explanation of the need of apartments in South Korea due to the high density and the lack of buildable land in deterministic terms.

It is interesting to note that the residents' opinions rely mostly on issues of management, rather than on spatial aspects such as urban form, building type or residential layout; and while the availability of parking was mentioned once, other evident advantages such as the provision of open space were left aside.

This stress on the importance of the proper management of the residential environment brings into focus, by omission, the alternatives to the *apat'u tanji* –the low-rise, high density housing areas that make up the rest of the housing spectrum in Seoul, or the informal settlements that populated many of the hills at the time mass housing started to be implemented. These areas contain different housing typologies, but are always understood and managed as individual buildings. Thus they depend on public management for garbage collection, maintenance, provision of parking and open spaces, etc.; and are at clear disadvantage. There is not thought on the possibility of having other residential types also privately managed in order to provide a similar degree of safety

29 See '8. Mass Housing as a Tool for Inner City Renewal' in Chapter 7, Volume 02.

30 See '22.4 The Role of the 주택 (Chutaek) Magazine in Defining the Modern Apartment Unit Layout' in Chapter 22, Volume 01.

and convenience; nor there is any discussion on whether the role of the public administration should precisely be that of providing 'convenience', 'security' and 'maintenance' to all citizens, regardless of their type of residence.

The implicit acknowledgement of the two polar approaches to housing environments –either modern apartments or low-rise, high density traditional fabrics- is a remnant of another well-constructed argument within the propaganda machine of the administration in order to change people's residential preferences[31].

The other big elephant in the room that was not spoken of when addressing the advantages of apartments was their investment value, which was then raised separately below.

3. The dual role of housing as real estate investment or as a setting for family life

Cho – *"The main purpose of the apartment is 50% for family use and 50% as a real estate investment. […] We did not really buy the apartment thinking of real estate investment, since we already have our own house in L.A. Our interest in this apartment were the views and the conveniences."*

Lee – *"The main use of the house is as a domestic setting for the family. Since we are tenants, there is not much chance for economic investment, but this tanji is relatively cheaper than newer apartments in the area. We own an apartment in another area that is slated for redevelopment, so that is our long term financial investment."*

Kim – *"Our intention in buying this apartment was 50% as a home and 50% as an investment, since the whole complex is slated for urban renewal soon and this will definitely bring values up."*

The two owner-occupants see their apartments 50% as an investment and 50% as a home. The value of apartments in Seoul typically increases faster than any other type of housing, and thus are the preferred residential investment. Even the *jeonse* system[32] used to be seen as an investment, as it allowed tenants to save in order to buy their own unit in the long term.

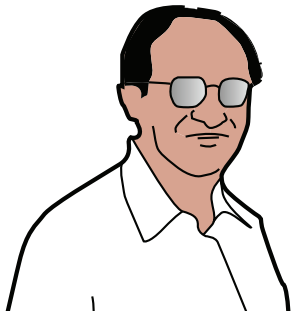
It is interesting to note that two of the interviewees mentioned residential redevelopment (Joint Redevelopment[33]) as a common source of economic revenue. This expectation of financial profit through *tabula rasa* urban renewal has been one of the major driving forces shaping the city in the last fifty years. In that regard, Kyong Park has written:

31 See 'Campaign to discredit the traditional city and to move services to the south bank of the river' in subchapter '5.2.5 Propaganda Machine', Chapter 5, Volume 01.

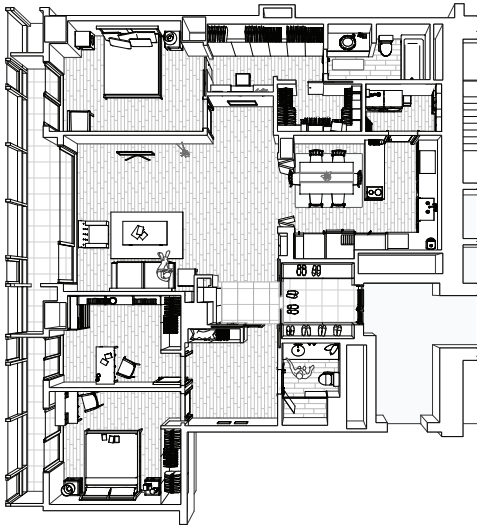
32 See "Glossary" on page 418.

33 See '8. Mass Housing as a Tool for Inner City Renewal' in Chapter 7, Volume 02.

Interview #1



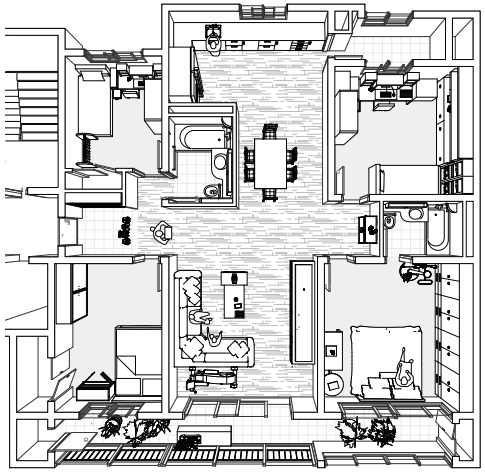
man
70 years old
married
living with spouse, empty nesters
3 sons living abroad
PhD in Medicine
retired



220m^2
owner occupancy
Togok-dong, Gangnam-gu
15 year old building
3 bedrooms
undisclosed price (>₩1,000,000,000)

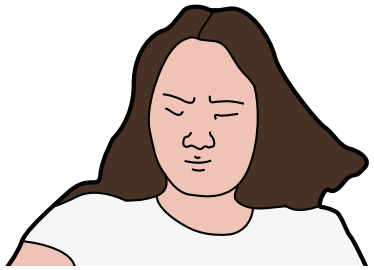
Interview #2

woman
51 years old
married
three-generation household
2 sons
restaurant owner

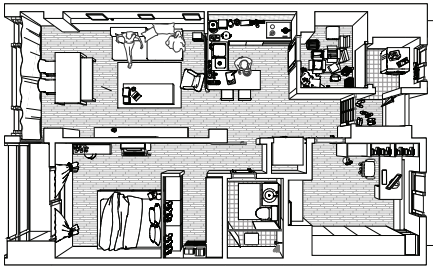


190m^2
tenant *(cheonse)*
Dohwa-dong, Mapo-gu
21 year old building
4 bedrooms
₩430,000,000 for a 2-year term

Interview #3



woman
36 years old
married
living with spouse
no sons
law degree, master in real estate
employed by a real estate development company



81m^2
owner occupancy
Apkujeong-dong, Gangnam-gu
39 year old building
3 bedrooms (originally)
₩950,000,000

Figure 23-11. Summary of Domestic Interviews in Chapter 21, Volume 02.

"And from above, Seoul may look like a war zone, with large areas of demolition that could easily be confused with bombed out sites, half-finished construction sites that may look like destructions instead, and clusters of hi-rise buildings that violently rise like explosions against the background of indiscriminate low-rise buildings that appear like a helpless mass of people under attack." (Park, 2010, p. 31)

4. Value of their apartment

Cho – *"(the price of this unit) is not relevant! […] The price of the unit has increased over the years, even though friends and family tried to discourage us from purchasing it originally, as it was very different from anything else in Seoul."*

Lee – *"We paid a cheonse of ₩430,000,000 for a two-year contract. The price of the apartment has not gone up since we live here, but the rent has – that is why we will have to move out. Some potential tenants have already been looking at the unit."*

Kim – *"We paid ₩950,000,000 and within two years, the value has gone up to ₩1,200,000,000 already, based on the expectation of real estate value rise after the redevelopment of the complex."*

These three short statements convey a multifaceted picture of the importance of real estate in the city. There is the underlying expectation that the price of apartments will always go up, as evidenced by the 26% value increase in only two years in the case of the Hyundai Apkujeong apartments. Of course this is a very special case, since Apkujeong is one of the most expensive areas in the city. But this expectation does carry the legacy from the period of demographic explosion, fast urban growth and escalating land value speculation. It is estimated that, between 1964 and 2015, the official total land price of South Korea grew more than 680 times, with Seoul accounting for 30% of the total land price of the whole country (S.-h. Kim et al., 2016, p. 43).

The comments also speak of the limited measures to control real estate speculation and to protect tenants, who are forced to move out at the end of their contract period if rents increase. This is another important reason for the high mobility of Seoul's inhabitants, of whom Kyong Park wonders:

"Home in Korea is no longer a place for living, but instead has become a commodity for investment and speculation. […] And you begin to wonder if Korean urban population is simply a vast collection of refugees who are constantly running away from the zones of destruction, Tabula Rasas, to the enclave of safe haven, A-Pa-Tu Danjis." (Park, 2010, p. 31)

5. nLDK unit layout

Cho – *"The unit has a Western distribution in the sense of the separation between night and day quarters, even though the master bedroom is included in the 'day' area. When our children and family come to visit for weeks at a time, they use the other two bedrooms as guest rooms."*

"The standardized layout of Korean apartments was probably developed by specialized architects. Its success is due to the fact that it conforms to people's expectations as to what an apartment needs to look like. The apartment is a consumer good to be traded, so it needs to be neutral to conform to as many possible tastes."

Lee – *"I would prefer the living room to be more isolated, but for an apartment this size it would probably be too small, so I like the fact that it is merged with the dining area and the kitchen, as it seems bigger."*

Kim – *"In my opinion, the Korean lifestyle is more family-oriented and less private than in the West. The typical layout of apartments reflects that, so it is good for circulation and communication among family members but at the expense of reduced*

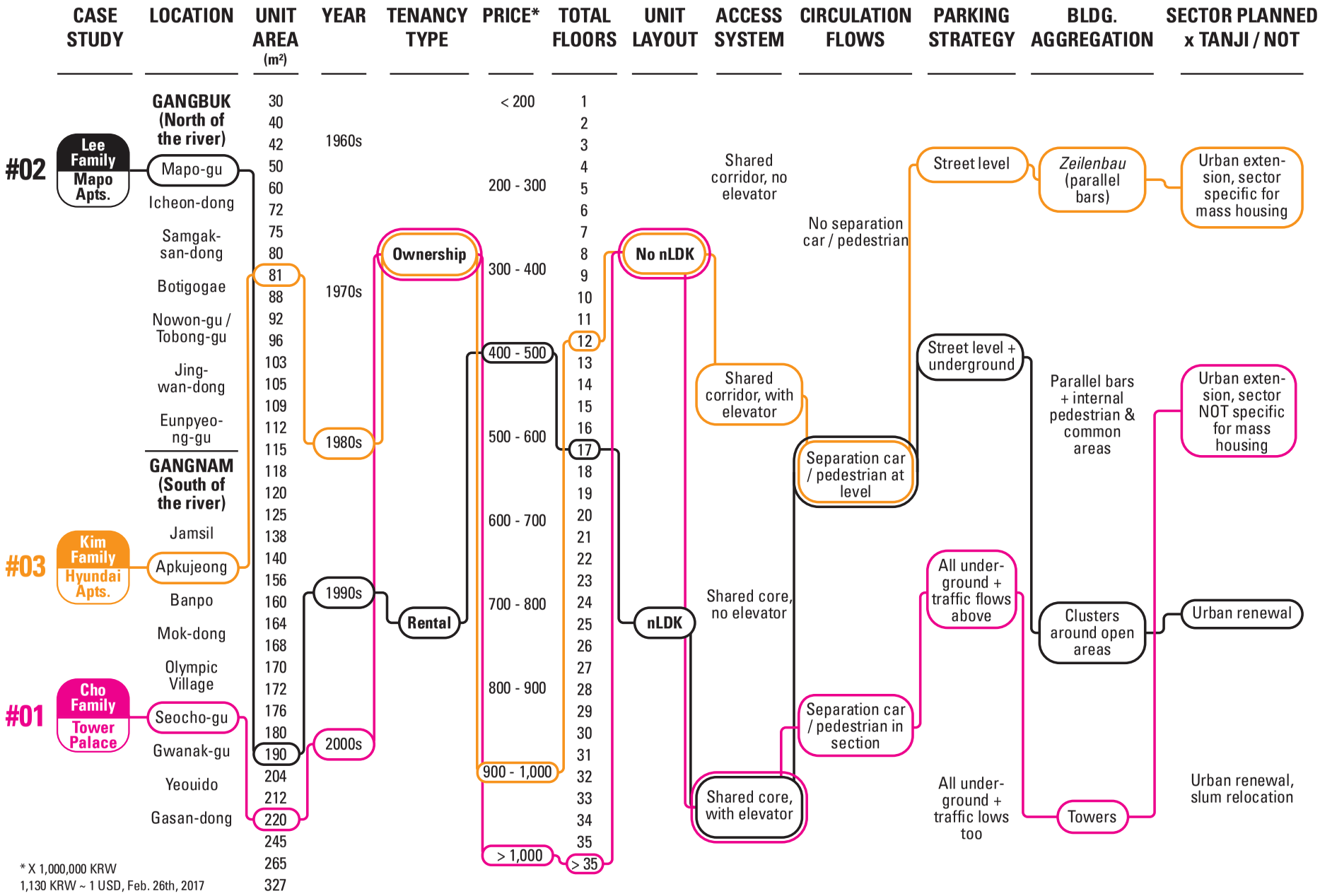


Figure 23-12. Chart of Domestic Interviews in Chapter 21, Volume 02.

privacy and possibly more nuisance from the noise."

"A sliding door made of reclaimed wood separates the public area of the house from the main bedroom area, where a corridor gives access to the bathroom and to a walk-in closet and adds privacy."

In all the interviews there was a clear understanding of the cultural implications of the layout of the apartment, as well as of the differences between Eastern and Western concerns for privacy and their impact in the plan of the units. This is probably due to the exposure to western lifestyles by two of the interviewees. Mrs. Lee's comment encapsulates the main conflict behind the adoption of either layout: she would prefer to have a more 'isolated' –thus, more 'private'- living room, but then it would probably be too small. So instead, and in spite of the large size of her household, she preferred having the living room merged with the dining area and the kitchen –this in itself being a definition of the nLDK concept-, even at the expense of a reduced privacy.

The younger couple had a different attitude and opted for 'westernizing' their unit by establishing clear boundaries between the day and night areas. This was achieved by introducing a new corridor as a privacy buffer between the main bedroom and the public areas of the house, as they considered entertaining guests at home even though that was not common among people of their age / social status.

6. Traditional versus Western lifestyles

Cho – *"The unit is minimally furnished in a modern, western style. We have Korean and antique furniture in our house in L.A. I dislike this sofa and would like a more modern looking one, but we got this one at a discounted price."*

"Since we are Christian, we do not hold traditional rites at home."

"My wife cooks both Korean and western food. […] She does not prepare traditional condiments or sauces, as nowadays you can get them from relatives or from church friends or you can also just buy them."

"In the past, two or even three generations of the same family used to live together under the same roof. That was not only for convenience, as chores could be shared, but it also provided social support and thus was good for everybody. That is not the case anymore."

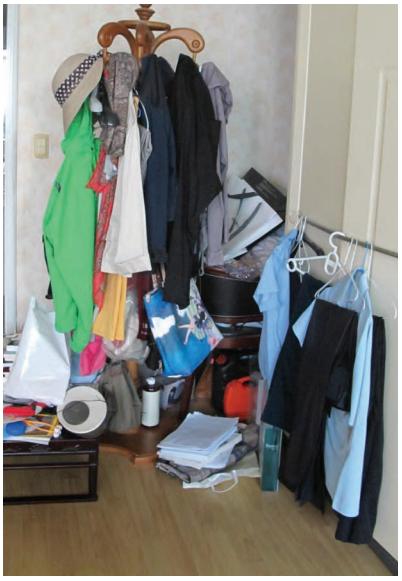
Lee – *"During the Seollal and Chuseok holidays, we remove the sofa and hold traditional ancestor rites here. In the fall we also prepare kimchi for the rest of the year on the floor."*

"My mother-in-law uses traditional, low furniture. These days it is getting more difficult to find this style of furniture, so we had to build a bed for her ourselves!"

"Since I work, it is my mother-in-law who cooks on a daily basis. She cooks Korean food."

Kim – *"I cook both Korean and Western food, but I don't elaborate traditional condiments and seasonings in bulk to be kept for the whole year as it was done in the past. My relatives will provide for that."*

"During the week we both tend to have all meals (including breakfast) at work, Due to our busy work schedules, we also meet friends for dinner outside. Thus, cooking is relegated to weekends and as a social occasion."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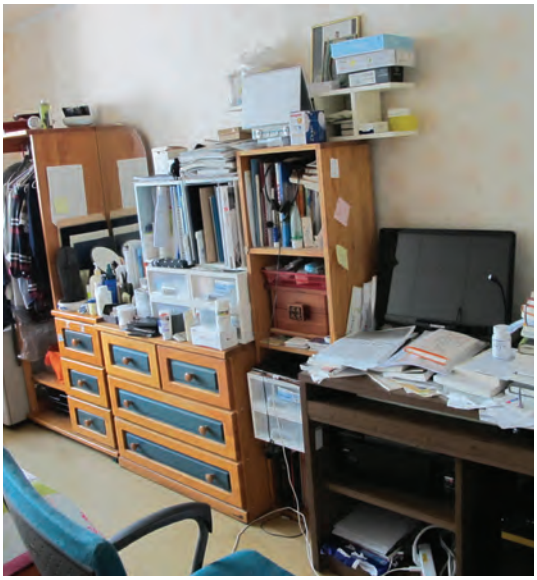
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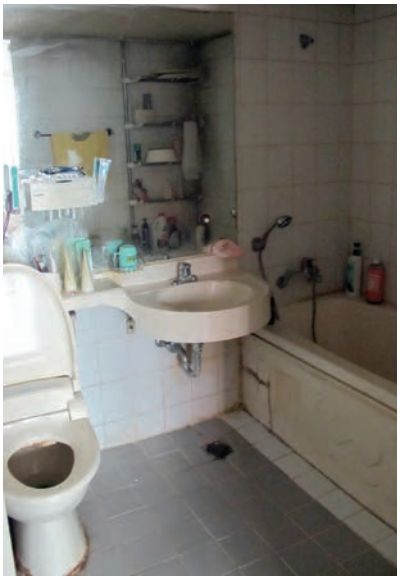
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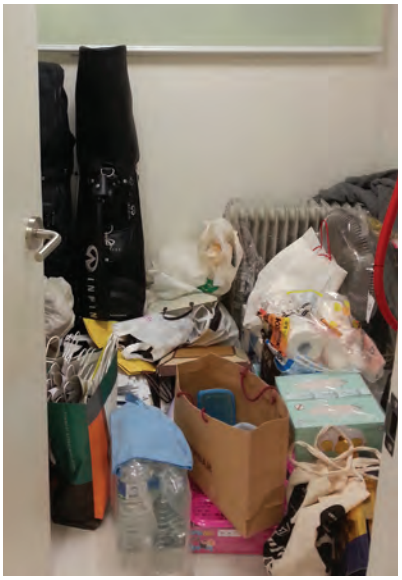
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Figure 23-13. Images of the interiors of the units visited during the Domestic Interviews featured in Chapter 21, Volume 02.
1-5: Interview #2, Mrs. Lee, Samsung Mapo Apartments
6-8: Interview #3, Mrs. Kim, Hyndai Apkujeong Apartments
9: Interview #1, Mr. Cho, Samsung Tower Palace
Photographs by author.

"We do not hold traditional ceremonies (Seollal, Chuseok) at home, as we typically meet the rest of the family at either parent's homes. I think the preparations for the traditional rituals are annoying and time consuming - there is definitely a generational change taking place. But I would consider living with my parents when they get older as it was common in the past."

There is definitely a polarization among the three interviews in regards to the maintenance of traditional ways versus a westernized lifestyle. The two households which own their apartments, whose members have lived abroad and who are more affluent, are also the ones with a more western lifestyle. The layouts of their apartments do not follow the typical nLDK system; they do not hold traditional rites at home; they do not prepare traditional condiments for the year; they do not use traditional low furniture; and they are not part of a multi-generational household. On the flip side, the Lee family, who rent their apartment, also happens to be the one keeping more traditional customs.

7. Storage

Cho – *"There is ample storage everywhere. The master bedroom even has two walk-in closets, one for winter clothing and another one for the summer."*

"We keep (the covered balcony) empty and neat. We only added a wood blind for privacy, but there are no traces of the objects usually stored in these spaces: bicycles, laundry racks, plants, shoes, storage boxes, etc."

Lee – *"There is not enough built-in storage, but since the apartment is big, there is enough room overall for all our storage needs."*

"We use the covered veranda as a greenhouse where we have plants. We also dry the laundry and keep the traditional ceramic vessels for fermented condiments."

Kim – *"we dedicated the room by the kitchen (what used to be the maid's room) as a storage room. We do not have a domestic helper but a cleaning lady comes once a week."*

"There was not enough storage space in the old layout, so we added a walk-in closet for clothing."

Storage remains one of the challenges in Seoul's apartments, especially in older units. As lifestyles changed and families' purchasing power increased, older layouts could not cope with the increase of goods accumulated. The growing lack of storage space increased in parallel to the growing need for parking spaces. Their limited flexibility also prevented easy adaptations to the new needs.

The three interviewees demonstrate three different aspects of the storage problem. The newest and most expensive unit (Mr. Cho) had no storage problems. Mrs. Lee's older unit had to cater to the needs of a large household, but since they did not own the unit, they had to resort to using the covered balconies as storage spaces, and there were also large areas of the rooms dedicated to storage.

Mrs. Kim addressed the issue by dedicating two whole rooms as walk-in storages, one by the kitchen and another as a clothing closet within the master bedroom.

8. Alterations / Customizations / Reforms

Cho – *"Internal spaces do not lend themselves much to adaptation or conversion, but they are very well thought-out. The layout includes lots of built-in storage, sliding doors and high quality materials. We have not done any modification to the original unit and never felt we needed to. […] I would never consider extending the living room all the way to the façade as it is so common in apartments in Seoul - there is a reason it is designed to be like that."*

Lee – *"Since we are tenants, we cannot renovate it the way I'd like to. Internal spaces are not suitable for adaptation, conversion or extension, but we do not really need it. If this was my place, I would redo the floors, change the lights and renovate the bathrooms."*

Kim – *"The apartment has been recently renovated, we hired an interior designer and it is evident in the coordinated palette of pastel colors and materials throughout: white oak flooring covers the entire unit, the tiles in the kitchen wall feature a delicate ornamentation, and the kitchen appliances are made of stainless steel. we enjoy cooking and having guests over, so the renovation was focused on providing for those aspects. Entertaining people at home is not common among people in our age / social status, and people in general do not have a tidy house to do so."*

The alteration or transformation of the units does not respond only to storage needs, but also to many other parameters such as the ageing of the finishes, amenities and installations; the increase of usable area by extending rooms onto the covered balconies; changes in household composition; the increase the value of the unit; etc. The extent of the transformations –from the simple substitution of finishes to the complete overhaul of the kitchen and bathrooms, the modernization of the windows, the substitution of the ondol flooring, the retrofitting of air conditioning, etc.- is related to the tenure type and to the age of the unit.

Again, the interviews show different stages of the ageing process of the units and their upkeep: the owner of the newest and most expensive unit (Mr. Cho) sees no need to renovate the unit as it completely fulfills his needs; Mrs. Lee cannot renovate her older rental unit to fulfill her needs since she is only a tenant; and Mrs. Kim has totally renovated her very old unit to match her modern lifestyle, even though she knows the entire housing estate is slated for urban renewal. One interesting comment is that of Mr. Cho in regards to the use of the covered balconies as storage spaces, showing how much of a common practice it has become.

9. Opinions in regards to the situation of housing in Seoul

Cho – *"The present condition of housing in Seoul, the price of real estate and the increasing number of people living alone are difficult issues to have an answer to. While in our generation it was easy to get a job, and with that you expected to be able to buy a house and form a family, nowadays even with a better education these basic aspects cannot be taken for granted anymore. This has given emergence to the so-called sampo sedae (*삼포세대*, 'three giving-up generation'), a generation that has been forced to give up dating, marriage and having children due to social pressure and to the economic problems related to increasing costs of living, education and housing. In some cases, this situation has derived to the so-called opo sedae (*오포세대*, 'five giving-up generation'), which adds giving up employment and home ownership to the list. Housing is thus a very important aspect in Korean society, as it has connections to all these basic aspects of people's life."*

Lee – *"The myth of increasing economic investment through real estate in Seoul is no longer true. Prices do not go up everywhere as they used to, there is no gain and no loss."*

"I also believe the paradigm of urban renewal based on the permanent demolition of older houses to build apartments has no future."

"There is a certain economic crisis in the apartment tanji model, but regardless of the monetary value, apartments still hold a qualitative value in terms of their convenience, their proximity to transportation, and their overall environment."

Kim – *"I am very aware of the housing situation in Seoul, since I work on the field. In my opinion, people continue to see housing as a real estate investment. But it is foreseen that, after 2018, prices will probably go down or stabilize due to demographic and socio-economic changes. There has been a generational change; while the goal of the older generations was to buy their home, younger people cannot afford it. There is the perception that the government is trying to make a profit out of increasing housing prices, following a general de-regulatory tendency, but I am skeptical that this will work after the 2008 financial crisis. Nevertheless, Gangnam is still regarded as a special area where real estate will probably hold its value better than in other areas."*

These opinions speak for themselves and reflect a widespread belief in a changing socio-economic context.

23.5 CONCLUSIONS: INFLUENCE OF TRADITIONAL URBAN DYNAMICS AND EVOLUTION OF THE TYPE BASED ON THE FORMALIZATION OF ADAPTATIONS

Just as the members of the Team X used the CIAM grid in their own, creative way in order to speak of the scales of association in relationship to the notion of habitat[34], the residents of the *apat'u tanji* in Seoul have taken the domestic framework that had been provided to them and adapted it to their own needs as much as possible. In spite of the claimed modern and westernized lifestyle of *apat'u tanji* as opposed to the ills and inconveniences of traditional fabrics, certain attributes of that traditional city have found their way into the complexes as a reminder that, in such a dense and expensive urban environment as Seoul, space is a valuable asset that is treated as a commons. Thus, apartment complexes feature local attitudes towards the use of public space through temporal occupations, informal extensions, densifications and appropriations that benefit individual interests and need to be negotiated with the community in a collective agreement. Even the job conditions of the security guards employed by the complex are based to a certain degree on a negotiated informality that renders them vulnerable, regardless of their uniforms.

Traditional understandings about how the city functions also undermine the secluded character of *apat'u tanji*. In spite of the gate around them, they depend on many kinds of interactions with the neighborhoods surrounding them, with which they establish a symbiotic relationship. They benefit from location, infrastructure, public transportation, commercial areas, public amenities, etc. At the same time, they may also contribute by providing open space, greenery, leisure facilities (sports areas and playgrounds), and even educational facilities and commercial spaces in some cases.

The nLDK unit type is a highly standardized layout that does not lend itself easily to customization by individual residents. But once an adaptation

34 See Figure 22-1 on page 315 and Figure 23-3 on page 361.

becomes widespread, it ends up being standardized, taken for granted by the market and incorporated into the 'formal' design: such is the case of the extension of different rooms onto the balconies and the adoption of the *ondol* (heated floor). So, in spite of the lack of embedded flexibility in the design, over the years of the typology has evolved greatly from the original foreign models. The hybrid name '*apat'u tanji*' is as a testament of their hybrid nature, and even the use of the denomination 'nLDK' borrowed from the mass housing type developed after World War II by the Japan Housing Corporation has very different connotations from the original.

The degree, scale and impact of adaptations by residents, both in terms of physical changes ('hardware') and changes in usage ('software'), is directly related to the economic value of the *tanji* and to their perceived status. This is, apartments have both a user value and an economic value. When the second has more weight, there is more pressure to have rules in place and to enforce them, in order to maintain or even increase value. This is why no noticeable adaptations could be found in the Tower Palace apartments (Mr. Cho, Case Study #11), or why in the case of the Hyundai Apkujeong apartments (Mrs. Kim, Case Study #6), the interviewed owner-resident renovated the unit extensively.

The interviews reveal some underlying assumptions about *apat'u tanji*:

- The deterministic assumption that apartment complexes are the only possible answer to the lack of buildable land, housing scarcity and demographic density in Seoul. This acritical argument is a product of the propagandistic efforts of the administration to change the population's residential preferences during the 1960s and 1970s.
- The expectation of financial investment with the ownership of apartments, which remains as a legacy of the period of demographic, economic and urban growth and takes real estate speculation as a desirable state of affairs. Since the mid-1970s, non-wage household incomes –primarily from real estate- have exceeded wage incomes in South Korea (W.-b. Kim, 1999, p. 15, cited in Park, 2010).

There is a profusion of comments which speak of an ongoing loss of traditional ways in favor of a westernized lifestyle:

- The fact that Mr. Cho (Tower Palace) keeps traditional furniture in his home in L.A. but not in the apartment in Seoul is an indication that such furniture has lost its original function to become an ornament.
- Mrs. Lee (Mapo Apartments) - *"My mother-in-law uses traditional, low furniture. These days it is getting more difficult to find this style of furniture, so we had to build a bed for her ourselves!"*
- Mrs. Kim (Apkujeong Apartments) - *"… there is definitely a generational change taking place."*
- Mrs. Kim also decided to 'westernize' her unit by reintroducing a corridor as a privacy buffer from the more public part of the apartment.

Overall, there is the sense of experiencing the end of a historical period in regards to mass housing and of uncertainty about what is to come next. This moment of crisis is due to deep changes in the socio-economic milieu that triggered the emergence of the typology and is what prompted, initially, the development of the present thesis[35].

35 See '1.5 Geographical Scope and Period Of Study' in Chapter 1, Volume 01.

CHAPTER 24
CONCLUSIONS TO SECTION 4 / THE SCALE OF THE HOUSING UNIT
THE LIVING ROOM AS A POLITICAL ARENA: THE FORMATION OF A STANDARDIZED MODERN DOMESTIC SETTING

Section 4 approached the scale of the housing unit as the embodiment of a compromise between the controlling aim of the state and the dreams and aspirations of the residents. It was based on the hypothesis that the modernization project of the developmental regime aimed to shape society by designing both the middle class family (through population policies) and its physical habitat (by defining a standardized unit type). This compromise was shown to be linked to wider dialectical tensions underlying and fueling the modern movement. At the domestic scale, these tensions acquire a political dimension.

Each one of the preceding chapters includes its own conclusions, but this final one consolidates and develops three main topics prevalent throughout the Section.

24.1 RATIONALIZATION AND STANDARDIZATION OF THE DOMESTIC ENVIRONMENT

The nLDK system transformed everyday life in mass housing estates by offering a new domestic setting which epitomized modern technologies of living. However, in spite of Mr. Blach's efforts to stress the advantages of type design as a flexible combinatory system of fixed elements against the rigidity of standardization[1], the development of the apartment plan layout in South Korea became highly standardized. In this, it echoed the normalization of the very families which were going to reside in them through the population policies described in Chapter 22. They embodied social and gender roles and allowed little adaptation to changing lifestyles or demographics[2].

As the selected materials from the magazine show[3], the adoption of modern lifestyles was greatly based on the prescriptive provision of measurements. Efficiency and optimization demanded the exhaustive knowledge of the dimensions of the body and its movement, so dwelling functions and spaces could be rationalized. In discussing Lefebvre's criticism of 'abstract' space as physical, metric and static versus the 'lived' space of the social and the political world, architect and educator Jeremy Till has made the following argument:

1 Excerpts from his article entitled 'The New 67 Apartment', published in issue #19 of the '주택 (*chutaek*). House & Home' Magazine are included in '3. The development of a modern apartment type for South Korea' in Chapter 22, page 328.
2 See Figure 22-30 and Figure 22-31 in Chapter 22.
3 See Chapter 20 in Volume 02.

"At one level the measurement of space is a benign, and useful, activity; it is necessary to know the area of a room so that, say, one can understand roughly how many people can occupy it. But the measure of space has a nasty way to becoming the dominant criterion of space. […] First, the user is inevitably treated as an abstraction. […] Second is the normalizing thrust of the whole process, in which everything from social behavior to family configuration to the sizes of chairs and people is marshalled into standardized descriptions. There is no place for difference or deviation in these homes [...]. Third is the mirroring nature of the logic: the determinations on use lead to typical furniture layouts, which in turn prescribe the size and shape of the rooms, which when built fix the patterns of use as initially supposed. […] One might here begin to get a bit twitchy about the apparent extension of political control into the domestic arena, especially when it is associated with the three characteristics of abstraction, normalization, and ordering."

(Till, 2009, pp. 120-121)

Till used the term 'hard space' to refer to Lefebvre's 'abstract space', and continued to state that *"Voided of explicit political or social content, hard space is reduced to those aspects of architecture that are easy to commodify (aesthetics and technique) or those aspects of space that are to do with control (efficiency and visibility)"* (Till, 2009, p. 123), and quoted Lefebvre directly: *"This space has nothing innocent about it: it answers to particular strategies and tactics: it is, quite simply, the space of the dominant mode of production, and hence the space of capitalism"* (Lefebvre, 1991b, p. 360. Quoted in Till, 2009, p. 123).

Many aspects of this criticism strike a familiar chord with the development of the Korean nLDK system and the role of the '주택 (*chutaek*). House & Home' magazine in it: the abstraction and simplification of the home to formal layouts devoid of experiential or social connotations; the normalization of social and gender roles; the deterministic nature of design; and finally the subjection of the domestic environment to the rule of the market and to political control.

The culmination of the sophisticated process of standardization of the domestic environment took place with the adoption of tunnel formwork construction systems for increased efficiency, as these systems literally solidified the nLDK plan layout in reinforced concrete, making it virtually impossible to introduce structural or ductwork modifications over time. At the urban scale, the standardization of the housing units and construction systems homogenized the cityscape.

The limitations of housing standardization were raised in Japan in the 1990s, where after fifty years the nLDK system started to show its limitations in coping with the needs of new and more varied lifestyles and household types. In her master thesis on post-war residential new towns in Japan, Michelle L. Hauk enumerated the issues that had arisen from the excessive standardization of the nLDK system over time: the failure to reconcile traditional Japanese modes of living with western ones; the specialization of rooms with western-style furniture cramped the small spaces (whereas traditional dwellings easily accommodated multiple activities through removable screens and furniture); the division of rooms resulted in an unwelcoming living environment; the standardization of society upon which the nLDK system was based did not reflect the diversity of Japanese everyday life; etc. She concluded that *"the excessive standardization resulted in bleak urban and social landscapes"*, where *"the role of the human being as a social creature within both the dwelling and outside of it rapidly evaporated"* (Hauk, 2015, pp. 90-91).

The necessary reconstruction of the old *danchi* built after the war in Japan required the definition of new standards according to current social and economic developments. Average housing areas doubled from 35 to 70 m^2, new spaces for a wider variety of uses were incorporated, and design experimentation was supported through competitions and innovative commissions. It was in this context that the Japan Housing Corporation approached architect Kazuyo Sejima to undertake a series of studies on the conditions of public collective housing. Sejima analyzed standard typological characteristics (area, number of rooms, functions, etc.) in order to understand the definition of functions and the aggregation strategies of the units that made up a dwelling, a building, a block and a neighborhood (García Martínez, 2016, pp. 43-44). The conclusions from those studies were published initially in the text 'Housing Studies' in the issue #19 of the Japan Architect magazine (1995), and one year later in the journal Assemblage in English with the title *'New Dwelling in the Metropolis: The Privatization of Exterior Space'*. The introductory paragraph read:

> *"At present the most prevalent form of dwelling in Japanese cities is communal housing, most of which follows an 'nLDK' pattern […] This system –a product of concern for interior space alone- has been implemented throughout Japan with little regard for a residential sense of scale or density, such that once different lifestyles have become homogeneous. One resolution to this problem is to consider exterior space in the design of collective housing. Thus in order to develop new apartment prototypes it is important to examine the possible relation of housing to the context of the city."*
>
> (Sejima, 1996)

Based on the research, the architect proposed a number of collective housing alternatives that offered the same average dwelling area (70m^2) and density (120 units / Ha) as contemporary social housing estates, but with varying relationships to the exterior environment (Sejima, 1996). Those studies became the theoretical background for the housing projects of her practice, which not only challenged the standardization and functional simplification of the nLDK unit layout, but also the deterministic myth about the high-rise apartment complex as the only solution to housing shortage[4].

The criticism and revision of the standardized unit layout in South Korea has not taken place in such a comprehensive manner. This is due to the shift towards the private sector that sets South Korea apart from other East Asian developmental regimes. After the collapse of the Wow apartments in 1970, apartment complexes were not targeted to the poor but to the middles class; and since 1978, the private sector has been the responsible for the majority of the production of mass housing[5]. This had two important consequences. First, there has not been a public entity managing and coordinating the whole process, with the capacity to address mass housing from a holistic approach which integrated sociological, cultural and economic research with design and technical solutions -as it has been the case in Japan with the Japan Housing Corporation (JHC), in Singapore with the Housing Development Board (HDB), or in Hong Kong with the Hong Kong Housing Authority (HKHA). Secondly, the focus on the implementation of mass housing has been very different, since private developers are driven by short-term profitability and the rules of the market.

4 See Figure 24-1.
5 See Figure 2-7 in Chapter 2, Volume 02.

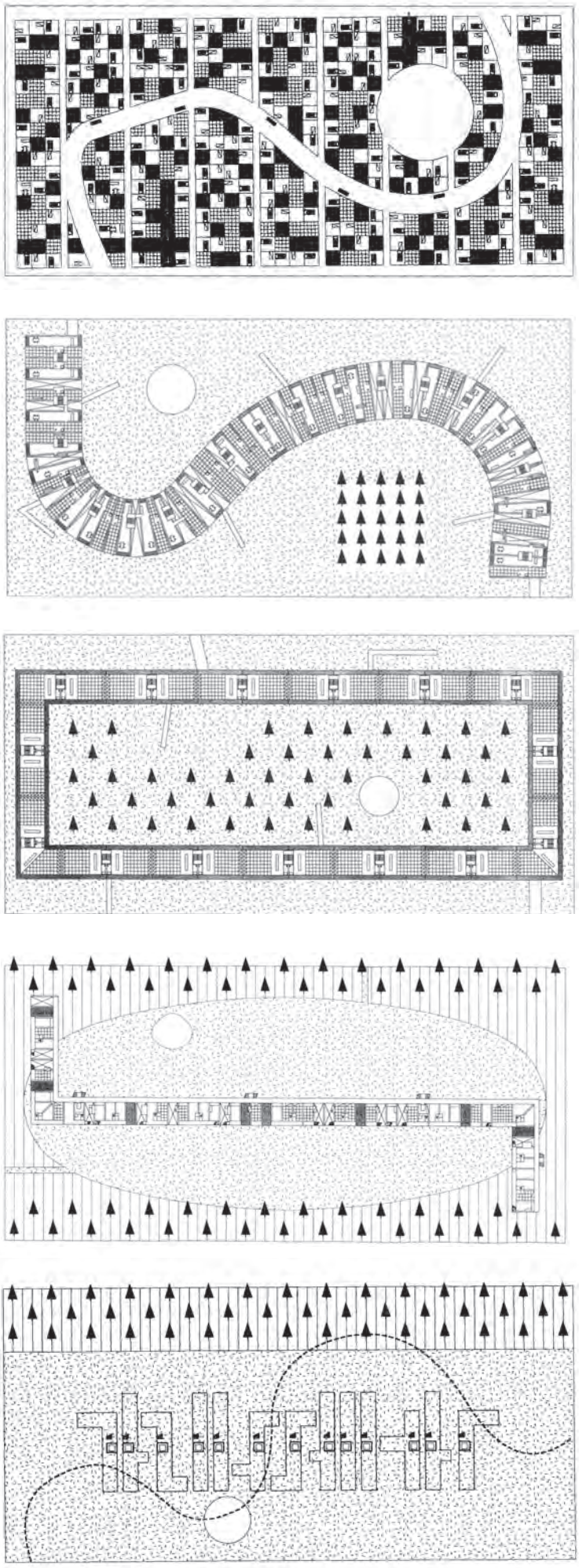


Figure 24-1. Alternatives for the layout of collective housing on a given site, providing a fixed density of one-hundred twenty dwellings per hectare.
There is one low-rise model, two variations of middle-rises, and two variations on high-rise models.
Kazuyo Sejima, *'Metropolitan Housing Studies'*, Assemblage #30 (1996).

24.2 HYBRIDIZATION OF IMPORTED LIFESTYLES AND TRADITIONAL WAYS OF LIVING

The standardization of everyday living through the development of a unit layout was not simply a process of passive importation and assimilation of modern lifestyles from abroad. It shows a high degree of hybridization through the preservation and adaptation of traditional lifestyles.

One of the crucial aspects of the cultural hybridization the apartments introduced was the conflict between two opposing attitudes towards posture and the use of furniture. In his book about the idea of home, Witold Rybczynski stated how,

> *"Differences in posture, like differences in eating utensils (knife and fork, chopsticks or fingers, for example), divide the world as profoundly as political boundaries. Regarding posture there are two camps: the sitters-up (the so-called western world) and the squatters (everyone else)."*
>
> (Rybczynski, 1986, p. 78)

He then went on to explain the reason for the different approaches, and argued that:

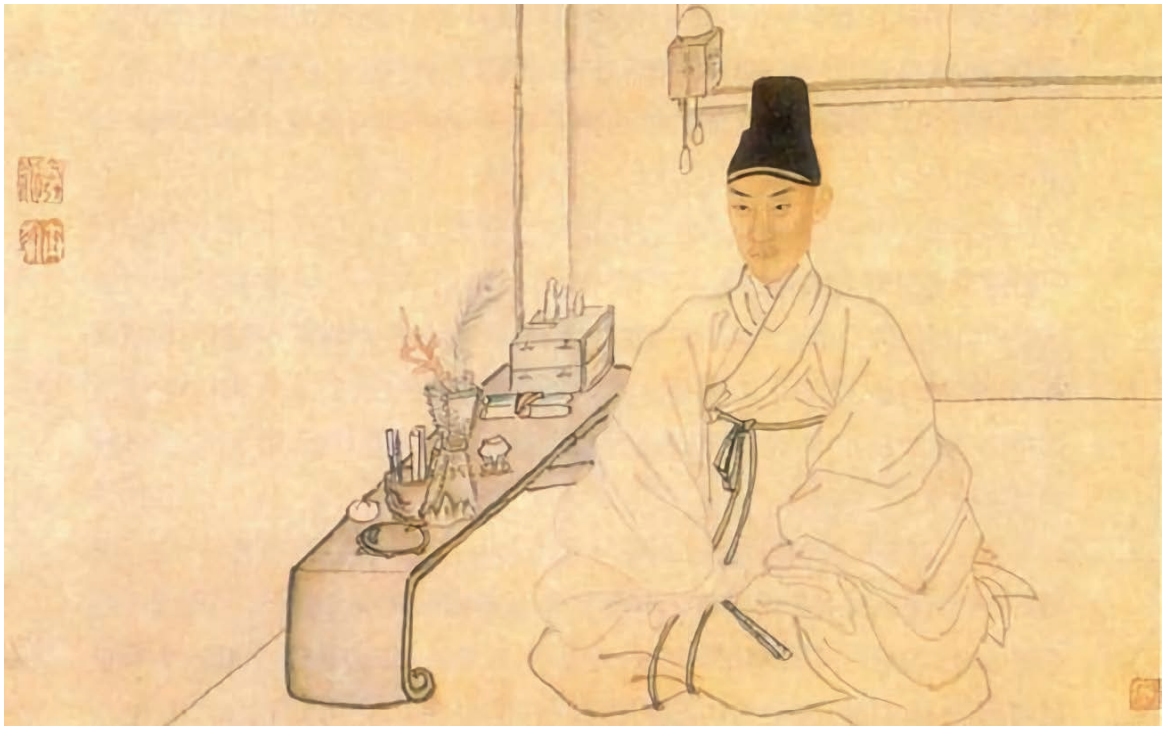
> *"The coincidence of all the factors necessary to comfortable sitting is so unlikely, [...] that it is not hard to imagine that many cultures, having had a try at it, would abandon the effort and wisely resort to sitting on the ground. This choice, in turn, would have affected the development of furniture in general [...]"*
>
> (Rybczynski, 1986, p. 96)

The author also indicated that ancient China was the only civilization where sitting and squatting coexisted. Chairs probably arrived from Europe via the Silk Route, and their adoption implied that homes had areas with high furniture (high tables, chairs and beds) as well as areas with low furnishings for squatting (Rybczynski, 1986, p. 78).

Figure 24-2 (included in Rybczynski's book) and Figure 24-3 represent the two very different traditions in regards to posture, the role of furniture and the specialization of rooms, related to a radically different relationship with the ground plane. As Rybczynski explained, Dürer chose to show Saint Jerome in a setting typical of his own time, in sixteenth century Germany. He is working on a medieval wooden table that can be easily disassembled and put away when not in use. Saint Jerome was a hermit so he is shown working alone, but as the author pointed out, it was uncommon for someone in the sixteenth century to have his/her own room. So, in spite of the range of personal objects shown and of the title of the engraving, the 'study' was most probably a room with many uses, all of them public. At the time, privacy was unknown and houses were full of people. Rooms were not specialized, so at lunchtime householders sat down around the table to have their lunch, in the evening the table would be taken apart to use the bench as a settee, and at night time chamber would be used as a bedroom – other versions by the same artist show the saint using his own bed as a seat. The main concession to comfort is the pillows that offer some padding against the hard surfaces of the bench and the back-stool, but they are by no means furniture to relax in (Rybczynski, 1986, pp. 15-19). In his self-portrait, painter Kim Hong-do chose to be depicted with the instruments of his trade. Next to him there is a low shelf with brushes, ink, an ink stone and rolls of paper. The framing of the painting shows a corner of a larger room, since there was also no specialization of spaces. But there are no table, benches, back-stools or pillows shown, implying that the floor would take most of those functions.

Figure 24-2. Saint Jerome in his Study, by Albrecht Dürer (1521).
This famous engraving is known for its depiction of intimacy in a study typical of Dürer's Nuremberg during the Renaissance (early 16th century). Included in Rybczynski (1986, p. 14).
Image of public domain.

Figure 24-3. Self-portrait of Kim Hong-do (김홍도), also known as Danwon (단원), (1745-1806?).
Kim was an official painter of the Joseon court who excelled in many types of painting. He is also very known for his depictions of the everyday life of common people.
Image of public domain.



In Korea, the functional specialization of the home with the development of the nLDK system and the importation of modern lifestyles from abroad facilitated the invasion of new types of 'high' furniture, but at the same time the prevalence of underfloor heating supported the maintenance of squatting, leading to a type of coexistence similar to that one in ancient China described by Rybczynski. In her description of the usage of the dining room (식당, *shikdang*), sociologist Valérie Guelézeau differentiated between 'nomadic' and 'sedentary' furniture. The dining routines of different residents interviewed by the author describe complex rituals in which one family would use both types of furniture, depending on the occasion. In some cases, this dual use of furniture may take place even during the course of a single meal, as regular courses would be served on the high table, and dessert and coffee on a traditional, movable low table (상, *sang*). She concluded by noting that the use of the traditional low tables –and the squatting posture they imply- is relegated to special occasions and more common among older population (Gelezéau, 2003, pp. 222-224). The domestic interviews included in Chapter 21 of Volume 02 corroborate that.

The topic of cultural hybridization refers to the disputed relationship between modernity and colonization. The classic interpretation saw colonialism as the instrument that brought modern values and institutions from the West to the colonized world, in a unidirectional manner. It was from this viewpoint that Japanese writer Jun'ichirō Tanizaki published *'In Praise of Shadows'* in 1933. The essay presents the dichotomy between modern western and traditional eastern aesthetics, represented through analogies with light (for clarity, enlightenment and reason) and shadow (for subtlety and impermanence) – hence the title. One of the main questions the book poses is about the possibility of a modern Asian sensibility devoid of Western influence:

> *"What incredible pains the fancier of traditional architecture must take when he sets out to build a house in pure Japanese style, striving somehow to make electric wires, gas pipes, and water lines harmonize with the austerity of Japanese rooms […].*
>
> *It was not that I objected to the conveniences of modern civilization, whether electric lights or heating or toilets, but I did wonder at the time why they could not be designed with a bit more consideration for our own habits and tastes.*
>
> *[…] how different everything would be if we in the Orient had developed our own science. Suppose for instance that we had developed our own physics and chemistry: would not the techniques and industries based on them have taken different form, would not our myriads of everyday gadgets, our medicines, the products of our industrial art – would they not have suited our national temper better than they do?"*
>
> (Tanizaki, 1977, pp. 1-7)

Postcolonial revisions since the 1990s contested this view with that of multiple, indigenous and alternative modernities (K. Bhambra, 2012). It is from this perspective that the authors of the book 'Made in Tokyo' wonder, *"How have we managed to arrive to such a different place to European Modernity despite being equipped with the same building technology?"*, as quoted in the introductory chapter of the research[6] (Kaijima, Kuroda, & Tsukamoto, 2001, p. 8). The seventy years between the two statements, both in the context of Japan, have made possible the development of an autochthonous modernity and thus the awareness of the possibility of 'different modernities'.

6 See 'A. Seoul's Mass Housing Estates are the Most Characteristic Spatial Practice of Modern Urbanization in South Korea', in '1.2 Hypothesis', Chapter 01, Volume 01.

24.3 THE STANDARDIZED UNIT LAYOUT AS A SYMBOL OF STATUS

The main goal of the '주택 (*chutaek*). House & Home' magazine was to support the radical lifestyle reform that took place especially between 1962 and 1978, through which the housing preferences of seoulites changed from detached, single storey houses to mass housing estates.

While originally apartment buildings were used to resettle the inhabitants of the many slums on the hillsides around downtown, after the collapse of the Wow apartments (1970) the government gradually decreased subsidies for social housing and focused instead on the construction of apartments for sale to the middle class. This housing policy shift implied that future owners would pay in advance for the construction of their dwellings through an installment system, and that apartment buildings would become part of mass housing estates in order to maximize economic investment through an economy of scale.

Different strategies were used to attract this growing sector of the population: a trickle-down strategy that generalized apartments first among celebrities in order to generate a lifestyle aspiration, the opportunity to have access to real estate ownership, an entry price lower than market value, access to elite education centers in the new areas south of the river, etc[7]. Simultaneously, the overwhelming disproportionate ratio between offer and demand due to the chronical housing shortage since the 1920s[8] transformed the emerging middle class into a captive costumer base without many alternatives in their residential choice.

Quickly apartments established themselves not only as the housing preference of the urban middle class, but as Valérie Guelézeau has written, as a true factory of this group (Gelezéau, 2003, p. 47. Quoting Eun, 1997). This took place in parallel to the take-off of the economic miracle, with the development of the modern family and with the emergence of a new consumer culture.

This symbiotic relationship between apartments and the middle class was also a form of political control, since the population that benefited from these housing policies would, in turn, support the developmental regime.

Apartment complexes and the nLDK unit plan in particular became a vessel for this middle class and for the increasing number of consumer goods that identified it. Apartments were established as one of the symbols of belonging to this new class, and thus a symbol of status[9] in a highly status-conscious society. In her book *'In Pursuit of Status. The Making of South Korea's "New" Urban Middle Class'*, Denise P. Lett elaborated on the importance of status in Korean society:

> *"The key to understanding South Korea's contemporary middle class and its development is the underlying drive Koreans have to attain status and prestige. […] this desire to acquire status, coupled with new opportunities to do so, has been a driving force behind the development of South Korea's human resources in general, of its new middle class in particular, and ultimately of South Korea itself."*
>
> (Lett, 1998, p. 41)

Since people were not accustomed to sharing domestic spaces, living in collective housing had to be learned. It implied being part of a community, with its share of benefits and obligations. Learning to live in collective housing was also learning to be modern, urban, and part of the new urban middle class.

7 See '5.2 Role of the State' in Chapter 5, Volume 01.

8 See '4.2 A Chronic Housing Shortage in the Twentieh Century' in Chapter 4, Volume 01.

9 See '5.4.5 Apartments as Status Symbols' in Chapter 5, Volume 01.

CHAPTER 25
CONCLUDING REMARKS

The thesis interprets Seoul's mass housing estates through three scales of analysis: the scale of the city, the scale of the housing estate, and the scale of the building type or residential unit.

The main 'City Scale' issue was whether *apat'u tanji* have been considered a way to establish guidelines for autochthonous modern urbanism and are more than just self-contained packages of housing. At 'The Scale of the Housing Complex' the issue was whether the development of *apat'u tanji* has produced autochthonous morphological innovations relevant to the wider field of mass housing. The aim of studying 'The Scale of the Housing Unit' was to define the features of modern Korean domesticity shaped by the development of a standardized mass housing unit type.

Chapters 9, 20 and 24 address the conclusions of each of these studies. This chapter summarizes the main findings, examines a selection of relevant topics within the larger context of the field, and offers recommendations for future research.

25.1 RESEARCH FINDINGS

Section 2: City Scale

At urban scale, the vision of mass housing's role within the overall urban structure is not unified: mass housing developments are isolated urban fragments rather than cohesive parts of the city. Decisions about housing estate location, size and systems of aggregation were not articulated within a larger urban vision that could integrate them with existing natural features and urban fabrics, either with other structures of growth such as transportation infrastructures or other mass housing estates. Instead of being planned in anticipation and considering environmental and social feasibility, *apat'u tanji* were used as a quick fix to the housing shortage from a quantitative standpoint. Their distribution in the city has been driven by the availability of land, conflicting policies between local and national authorities and short-sighted economic profit. Over the years, *apat'u tanji* have been used indistinctively as a tool for urban extension, for the colonization of virgin land in the metropolitan area and for inner city renewal[1].

The implementation of mass housing during the study period did not follow a unified vision about the role it would perform in the city. Nevertheless, the experience accumulated through the process of trial and error based on the piecemeal borrowing, adaptation and integration of planning processes and formal models geared towards the large-scale provision of housing units became

1 See Chapter 3 in Volume 02 and Subchapter 7.2 in Volume 01.

consolidated over time into an organizational technology that standardizes the development of housing estates as independent urban sectors.

The shift to the private sector and the increase in demand due to the planning of satellite cities and the popularization of Joint Redevelopment renewal processes[2] further accelerated the optimization of the planning and construction of apartments to meet the strict, below-market prices set by the government[3]. This was achieved by lowering costs, speeding up times and ensuring the financial feasibility of projects through scientific management methods. Since mass housing was adopted in South Korea later than in many other countries that had already undergone reconstruction after World War II, there was already a wealth of tried and tested expertise ready to be borrowed. The main concepts, strategies and formal models pressed into service in this process of standardization have been: *tabula rasa*, the construction of artificial land, strategies to optimize the acquisition of land, the use of street grids as frameworks for urban development, the use of urban blocks as units of that development, the implementation of neighborhood units and their evolution into the living zones theory, the adoption of linear structures of growth and the concept of new town[4]. They are not part of a fixed formula. Instead, they operate as a kit of self-contained methods that can be pressed into service incrementally as needed. Their implementation over time has defined a ubiquitous module for urban development between four and five hundred meters.

The specific process of diffusion of modern urban and architectural concepts, methods and forms through borrowing, adaptation and innovation in different stages has shaped the implementation of mass housing, the planning discipline and the understanding of what a modern city is in South Korea. The main characteristics of the urbanism of mass housing are a focus on techniques rather than theory; detachment of spatial references from their social underpinnings; standardization of site planning through spatial formulas that do not consider the particularities of individual sites; fragmentation of the city into self-contained housing enclaves; privatization of extensive parts of the city, including spaces (lanes for circulation, leisure areas and green areas), amenities and their management; and the production of mono-functional urban enclaves, since *apat'u tanji* are not multifunctional, diverse, complex environments, but rather bedroom communities or suburbs within the city.

Section 3: The Scale of the Housing Complex

At the scale of the housing complex, distinctive morphological innovations based on aggregations of clusters of residential buildings were developed for a short period in the 1980s as a culmination of the experience of the Korean Housing Authority.

During the first two decades of implementation of mass housing in Seoul, *zeilenbau* site planning strategies[5] were widely adopted as complete packages that included site planning, building types and housing unit layouts. Over this period, the strategies underwent adaptations that helped develop a local design culture of mass housing. Adaptations included the arrangement of residential blocks east-west rather than north-south, enclosure with a fence, provision for automobiles, a focus on the middle class and an increase in residential density. Nevertheless, the increase in residential density through incremental adaptations of the original model soon showed its limitations. A new mass housing model was needed.

The shift from *zeilenbau* layouts to planning based on clusters was a turning point in the development of *apat'u tanji* in Seoul. It is the most recognizable and original contribution to the international diffusion of mass housing at the scale of site planning. Reflecting an important shift towards a community-building agenda that emerged in modern urbanism after World War II, foreign models were transformed by advanced local expertise and hybridized into distinctively original

2 See '8. Mass Housing as a Tool for Inner City Renewal', in Chapter 7, Volume 01.

3 Though the amendment of the Housing Construction Law of 1977.

4 See Chapter 8 in Volume 01

5 Or 'row housing', see Chapter 19, Volume 02.

ideas and practices through the coincidence of a set of unique conditions. The Korea Housing Corporation used the need to build housing for two international sports events in the middle of the 1980s, the Asian Athletics Games of 1986 and the 1988 Summer Olympic Games, to push the design of mass housing in international design competitions. The radically different design approaches adopted in the two cases did not predetermine a fixed spatial formula as the *zeilenbau* model had. What they had in common was the integration into a cohesive system of all site planning strategies, including overall spatial structure, position of the clusters within it, articulation of different scales, uses and definition of open space, circulations and the approach to parking. The rejection of spatial formulas and the ensuing need to respond to the specific conditions of a housing project reestablished the agency of designers.

This turned out to be a short-lived heyday. A confluence of circumstances at the end of the 1980s interrupted the development of cluster site planning under the patronage of the public housing agency. The shift to private development coincided with an enormous surge in demand and the construction of the first satellite cities in the metropolitan area, which had been planned to increase housing supply and stabilize prices. The demand brought about by these changes and the competition among private developers could have been a unique opportunity to further develop the design of *apat'u tanji* based on clusters initiated in the previous decade. However, this was not the case. The fact that housing was a captive market with limited supply, the monopolization of this market by a few suppliers and the declining role of the public authority in the development of housing made innovation irrelevant. Instead, spatial models developed in the previous decade were quickly borrowed by private construction companies, simplified from their theoretical foundations and social agendas, and hastily pressed into service as systematized formal and technical solutions in order to meet the increasing housing demand. *Apat'u tanji* became anonymous products that favored coherent corporate brand identity rather than site specificity or the agency of the designer.

Clusters were useful since the planned provision of common amenities and open spaces contributed to a better residential environment. Rid of their role as social arenas, housing complexes became organizational devices for scientific management of the built environment, geared towards optimizing residential density, built area and economic profit.

Section 4: The Scale of the Housing Unit

The main goal of the provision of mass housing in South Korea during the study period was to address the chronic housing shortage. However, the new technologies of living that were implemented pushed a lifestyle reform that radically transformed Korean living environments. Mass housing gradually became a technology to envision the modern city and the lifestyle of a new type of citizen: the urban middle class. Under the stewardship of the developmental administration through the Korean Housing Corporation and in parallel with the implementation of strict population policies, the evolution of a standardized unit layout shaped the modern family and transformed it into a basic economic unit and a political subject supporting the regime. The standardized unit layout became a tool for political control of the domestic arena through the abstraction of residents-citizens, the normalization of family life into standardized prescriptions and the ordering of patterns of life.

The main innovation introduced though modern apartments was the package of spatial strategies that evolved from nineteenth century hygienist and moral reformist concerns: the separation of sleeping quarters from eating areas, the separation of bedrooms for children and parents, the modern kitchen and bathroom and the resulting functional specialization these innovations entailed. The unit layouts of the first *apat'u tanji* borrowed directly from foreign references, but soon a process of experimentation ensued. The development of a standardized unit layout was not simply a process of passive importation and assimilation of modern lifestyles from abroad. There was a high degree of hybridization between foreign references and traditional customs and lifestyles. The main refer-

ence was the nDK system developed in Japan after World War II for implementation in public mass housing complexes, through a series of collaborations between the Japan Housing Corporation and academics during the 1950s. 'N' meant the number of rooms in the unit, while 'DK' stood for 'dining-kitchen', a modern kitchen unit large enough to accommodate a family meal. In South Korea, the type was originally adopted in public housing projects for the resettlement of squatters, thus small sizes were maintained. However, when the project was aborted at the end of the 1960s, apartments were targeted at the middle and upper-middle classes and began to get bigger, initiating an evolution that would take the Korean nLDK type down a very different path. To cope with the increasing area, plans were divided into night and day quarters, with a clear threshold separating the two. A corridor provided privacy for the bedrooms, while kitchens were segregated from the living room.

The type underwent a process of experimentation and incremental evolution in response to a variety of factors, such as an increase in building height, changes in structural systems and evolution of access systems. This was consolidated by the end of the 1980s, which coincided with the hegemony of private development of mass housing. Over time, the separation between night and day quarters was blurred as bedrooms started to gravitate around the LDK space, which took a central position once the kitchen had been totally integrated into it. Consequently, corridors became unnecessary and were gradually discarded. This blurring of strict boundaries based on privacy within the house responds to an intrinsically Korean understanding of the domestic domain that has its roots in the traditional courtyard house (or *hanok* - 하녹).

Another important feature of the cultural hybridization triggered by the introduction of apartments was the conflict between two opposing attitudes about posture, the use of furniture and the relationship with the floor. Koreans traditionally sat and slept on the floor, a habit with wide implications in the domestic environment. The introduction of modern western layouts, bathrooms and kitchens facilitated the adoption of new types of high furniture and the functional specialization of the different rooms. However, at the same time, the prevalence of underfloor heating and the habit of not wearing street shoes inside the house allowed squatting and sleeping on the floor to be maintained. The simultaneity of both options offers users a variety of choices depending on the occasion, but there is a general tendency towards upright seating lifestyles, especially among the younger generations, which reflects a perceived association between Westernization, modernity and social status[6].

The nLDK type has no provision for in-built flexibility and thus does not lend itself easily to adaptations by residents. There are two reasons for this: structural constraints and market value. The Korean standardized nLDK layout became fixed with the hegemony of private development by the end of the 1980s, and has developed little since then[7]. The standardization of the unit type came together with the standardization of high-rise residential construction in vertical modules of two units per floor sharing an elevator-staircase core. These vertical building modules were efficiently built using tunnel formwork technology, which offered speed of construction, high quality control, accuracy and cost efficiency, but also required the normalization of the structure. The technical solutions adopted in the pursuit of higher buildings, which were mainly structural but also addressed access strategies, mechanical systems and others, had a direct impact on the internal layout of the units and on the way they were aggregated around common access strategies and thus shaped the lifestyle of residents and their interactions with neighbors. Simultaneously, the normalized nLDK layout was perpetuated by the fact that the apartment unit was identified with the average middle class family and perceived as a symbol of social status. This is because prioritizing the exchange value of apartments in the real estate market rather than their use value as the setting for family life favors the preservation of neutrality and uniformity over personalization.

6 See domestic interviews in Subchapter 23.4, Volume 01.
7 See Figure 22-30 and Figure 22-31 in Chapter 22, Volume 01.

There are nevertheless undisputed features of the nLDK layout that come from developers fulfilling the demands of residents or from adaptations introduced by residents themselves in their daily life, rather than from institutional and/or academic research and development or from the importation of foreign lifestyles. Some of these adaptations have been popularized over time so they have become widespread, taken for granted by the market and thus incorporated and formalized into the standardized unit design. Underfloor heating is a good example. The first heating systems introduced in apartments were based on radiators, as they were considered an innovation. However, over time, the residents' preference for traditional underfloor heating pushed the development of construction systems to accommodate radiant flooring technologies using hot water pipes embedded in a layer of concrete on top of the structural floor of each apartment. This allowed maintenance of the traditional use of the floor for seating and sleeping. Another well-known adaptation that has become formalized over time is the covering of balconies with glass partitions so that they buffer the harsh weather variations throughout the year. Since many residents-owners would extend adjacent rooms onto the balconies[8], construction companies ended up making the necessary provisions to the finishing of the units to facilitate that extension. Another concession to local customs was the storage of fermented foods such as kimchi, soybean paste and others. These basic staples of Korean cuisine used to be stored outdoors in clay pots[9], but turned out to be difficult to integrate into multistory collective residential buildings. Despite some early attempts[10], clay pots were finally banned from *apat'u tanji*. This pushed the growing sector of manufacturers of domestic appliances to come up with special refrigerators for fermented condiments. Their widespread use meant that extra space was provided in kitchens. Another relevant influence in the development of the LDK space was the tradition of hosting family events such as weddings, funerals and rituals in memory of family ancestors. The arrangement of props and the space required to accommodate the extended family meant that a flexible space was required within the home to allow for multiple activities[11] – not dissimilar from the role of the central courtyard in traditional houses[12].

The hegemony of private development from the late 1980s and the market's consequent capture of mass housing morphologies and unit types that had been developed earlier under the patronage of the public housing authority accelerated the commodification[13] of housing. The evolution of the standardized unit was halted, since the exchange value of apartments favored uniformity and neutrality. The excessive normalization of the type has prevented it from adapting to users or to the changing needs of residents over time. *Apat'u tanji* have become spatial organizational protocols that mass produce the built environment at different scales.

8 See '7. Appropriations by Users' in Chapter 7 (Mapo Apartments) and Chapter 15 (Olympic Apartments), in Volume 02.
9 See Figure 20-47 in Chapter 20, Volume 02.
10 See Figure 20-47 in Chapter 20, Volume 02.
11 See '22.6 Timeline: Evolution of the Standardized Unit Layout (Towards a Modern Korean Domesticity)', in Chapter 22, Volume 01.
12 See '22.5 Precedents Of The Apartment Typology', in Chapter 22, Volume 01.
13 *'Process by which the economic value of a thing comes to dominate its other uses'* (Madden & Marcuse, 2016, p. 17).

25.2 DISCUSSION OF THE FINDINGS

A. Lessons Learned: What Makes a Good Tanji?

Apat'u tanji are an inextricable element of South Korean urban modernity. However, as demonstrated during the research, their implementation during the study period was not a smooth and homogeneous process. The construction of mass housing in Seoul over the years has followed different rationales, targeting various user groups, with changing roles within the larger structure of the city, and with variable degrees of engagement by the public and private sectors. Their evolution was driven by a need to provide higher residential density and their economic sense, but it also reflects the evolving expectations of the population and the influence of international discussions about the city, housing and community-making. Based on an analysis of the phenomenon at three scales, this subchapter discusses which *apat'u tanji* work better than others and what directions could be taken in further development.

At urban scale, the apartment complexes of Seoul have not provided a new urban model that can integrate new mass housing estates with the pre-existing city and natural features, or with new structures of growth. Seoul remains an example of what not to do in terms of fast development of large amounts of new mass housing estates. The construction of hundreds of thousands of new units will inevitably change the essence of a city. A qualitative jump of scale based on a vision of the city being built is required to shepherd growth over time, integrate transit-oriented development, the planning of networks of open spaces and natural corridors and homogeneous distribution of amenities and facilities, among other factors.

At the scale of the housing estate, Seoul has produced relevant contributions to the development of mass housing. The expertise accumulated by the Korea Housing Corporation since the construction of the Mapo Apartments in 1962 blossomed in a short but remarkable golden period during the 1980s. In this period, the *zeilenbau* site planning models adopted until then were replaced by organizations of residential clusters with community-building aspirations, which reflected the changing sensibility and lifestyles of the budding urban middle class. Two unique projects demonstrated these innovations: the Asian Athletics Games Village Apartments of 1986 and the Summer Olympic Games Village Apartments of 1988. They are relevant because they integrated all site planning strategies into a cohesive system, including the layout of residential buildings, the separation of pedestrians from vehicles and the coordination of different scales of circulations and open spaces within the same complex. Within this system, groups of residential buildings defined clusters with shared accesses, amenities and open spaces as small communities within the larger complex. Furthermore, this system was not fixed into a spatial formula, so it could incorporate reinterpretations of elements from the traditional residential quarters of the city and adapt to the particularities of a site. In so doing, it renewed the agency of the designer as the critical voice responsible for these adaptations and reinterpretations. This model had some shortcomings: they were planned in isolation from their immediate surroundings and they remained as bedroom communities instead of supporting a wider variety of activities that could have rendered them as self-sufficient, sustainable urban communities. With the shift to private development, the evolution of these strategies was interrupted. They would be simplified, stripped of their community-building ideals and captured by the market as spatial organizational strategies. Another later relevant contribution was the relocation of all parking requirements underground, which allowed the ground plane in between the residential buildings to be treated as a shared landscape.

At the scale of the building type and the residential unit, the development of a modern housing typology stands as a relevant reference in the global diffusion of modern architectural models. The Korean nLDK system hybridized traditional spatial organizations with modern technologies, catering to a local experience of domesticity, privacy, posture and comfort. Nevertheless, the excessive standardization of this unit type according to the demands of scientific management of

the construction process ruled out the possibility of adapting it to different types of users or to the changing demands of residents over time.

Throughout the evolution of mass housing in Seoul, there have been notable contributions by experts who have stressed the advantages of type design as a flexible combinatory system of fixed elements in opposition to the rigidity of standardization. As early as the 1960s, Danish architect Klaus Blach, working as a consultant for the Housing Research Institute of the Korea Housing Corporation, proposed a modular system called 'the new 67 apartment' adapted to Korean lifestyles and based on that principle[14]. In addition, architect Woo Kyu-sung, designer of the Olympic Games Village Apartments, referred to John Habraken's alternative to traditional mass housing methods, which are called 'supports', in his design. The Dutch architect proposed that the state would provide a basic infrastructural framework or 'support' onto which residents would later build their own living spaces according to their own needs.

By relying on the provision of mass housing by the private sector, South Korea has taken a different approach to the rest of the East Asian developmental regimes[15]. This shift to the private sector froze research and development on mass housing and prevented revision of the standardized nLDK layout, since no institution could lead the research and development efforts that integrated sociological, cultural and economic research together with design and technical expertise. The focus of private developers on short-term profitability and market rules favored standardization of building solutions and the commodification of habitats, which in turn have perpetuated normalized lifestyles.

The direction taken by the Hong Kong Housing Authority shows a completely different approach towards unit layouts. Over a period of fifty years, the public institution has perfected a model of flexibility and indeterminacy that leaves it to the future residents to decide the interior layouts of their homes. This is achieved by minimizing load-bearing partitions, providing services along easily accessible perimeters, and furnishing a sturdy surface finished without decoration[16] (French & Lee, 2013, p. 23).

14 See Figure 20-7 in Chapoter 20, Volume 02.

15 See 'B. Qualitative Aspects - Private Management of the Implementation Compared to Other East Asian, Developmental Counterparts' in Subchapter 1.3, Chapter 1, Section 01.

16 See Figure 25-4 and Figure 25-5 on page 401.

Figure 25-4. Basic housing unit shell provided by the Hong Kong Housing Authority within a Trident 2 residential building type.
Source: French & Lee (2013) p. 173.

Figure 25-5. Alternative layouts arranged by different tenants.
Source: French & Lee (2013) p. 173.

B. *Apat'u Tanji* as Isolated Urban Fragments

Apat'u tanji are intrinsically bounded, autonomous and self-contained urban entities[17]. They comprise a single property segregated from its immediate context, without continuity of urban systems such as street grids or green spaces. Even though they cannot be understood as gated communities, since some degree of permeability exists, the strategies for defining their boundaries are an important part of the design and have evolved over time. Joh Sung-yong, architect of the Asian Athletics Village Apartments, expressed in an interview: *'To be frank, main gates of apartment complexes should be eliminated and let everyone easily come and go. However, us Koreans like to make clear boundaries of 'my apartment building', 'my apartment complex' and prefer fences and gates. They refuse to share any space with outsiders. During the design phase, I insisted on getting rid of the fence but in the end I had to yield to the government with four gates on all four sides of the complex'* (Post Seoul, 2017).

It remains for further research to ascertain whether the demarcation of *apat'u tanji* as clearly defined perimeters in strong contrast with their surroundings reflects an autochthonous urban tradition. The urban structure of Hanyang as the capital of the Joseon dynasty featured a marked distinction between the clearly delineated precincts of the palaces and the surrounding organic urban fabrics strongly influenced by the topography and the network of streams[18]. These enclosures not only separated inside from outside: they also structured the internal spatial organization of the palaces by grouping clusters of pavilions around courtyards[19]. On the outside, the continuous palace wall provided a background and a clear reference for the otherwise non-hierarchical surrounding urban fabrics. The definition of a boundary as a demarcation between a controlled environment differentiated from the outside and a way to structure its interior worked at other scales as well, as exemplified by the City Wall around the traditional capital and the arrangement of traditional housing types. Now, large parcels of land within the city such as university campuses, parks, company headquarters and others continue to be confined within enclosed compounds.

C. Debunking the Myth of *Apat'u Tanji* Density

The adoption of mass housing in Seoul since the developmental era is typically justified by the housing crisis, caused by a lack of land in an overpopulated country where 75% of the territory is mountainous, combined with the concentration of opportunities in the capital. In response to the crisis, mass housing estates were presumed to be the obvious choice, since they provided both open space and high residential density[20].

The question is whether they achieve this. Residential density in the Case Studies featured in Section B of Volume 02 fluctuated from 137 units/Ha in the Mapo Apartments built in 1962, 116 units/Ha in the Jamsil-5 tanji Apartments from 1983, 227 units/Ha in the renovated Mapo Apartments of 1993, and 196 units/Ha in the Jamsil Ricenz Apartments from 2008[21]. While some of the later residential densities are indeed high, they are not higher than other types of residential morphologies available at the time , such as mid-rise and closed urban residential blocks typical of compact cities[22].

Of course, it was precisely the perceived insalubrity of those closed blocks that the pre-war Congrès Internationaux d'Architecture Moderne (CIAM) were against, in particular after the Charte d'Athènes (1933). Even so, by the 1960s there were plenty of examples of residential projects that demonstrated alternatives to modernist housing estates, based on reinterpretations of traditional urban blocks that maintained a direct relationship with the street as a public outdoor

17 See Subchapter 1.4, 'Definition of apat'u tanji' in Chapter 01, Volume 01.
18 See Figure 25-6.
19 See Figure 25-7.
20 See Figure 25-8.
21 See Chapter 19, Volume 01.
22 See Figure 25-9.

Figure 25-6. Map of Hanyang (Seoul) during the Joseon dynasty (도성전도), 1848.
The map shows the perimeters of the palaces and other relevant precincts.
Source: 서울이야기 - http://seoulstory.net/ (public domain).

Figure 25-7. Painting of Eastern Palaces (동궐도), date unknown.
The map shows the inner structure of the palace as a complex clustering of precincts. Source: Wikipedia (public domain).

space[23]. Given the existence of many well-known references of residential morphologies with densities that were similar, if not higher, than the case studies, why did *zeilenbau* mass housing layouts based on nineteenth century hygienist concerns and pre-war rationalist precepts that were already outdated and criticized in their countries of origin enjoy a second life in Seoul during the 1960s and 1970s?

Initially, besides being seen as a cure to the housing shortage and a way to improve the urban environment by offering a higher population density and occupying less land than single-family houses, they were regarded as the physical expression of urban modernity, as President Park Chung-hee expressed in his inaugural speech for the Mapo Apartments in 1964[24]. The variety, heterogeneity and specificity of the modern mass housing project had been reduced to the universalizing solutions of the Functional City in Western Europe during the early 1930s[25]. This simplification was commonplace in Seoul during the 1960s, due to the peculiarities of the international diffusion of twentieth century planning and architectural models through processes of borrowing, adaptation and hybridization, as discussed by Stephen Ward (Ward, 2000, p. 49). According to the author, in an 'undiluted borrowing' process of diffusion, external ideas and practices were often received with a limited awareness of the full range of alternative planning models available, which reflected a high reliance on foreign planners to support leadership, and deference to ideas arising in countries from which the borrowing took place.

In a second phase during the 1970s and early 1980s, once *apat'u tanji* had been popularized through the marketing efforts of the Korea Housing Corporation and the packages of legal and economic advantages arranged by the administration, they were established as a source of economic opportunity and a symbol of social status for the emerging urban middle class. They were part and parcel of the productivist welfare system within the developmental socioeconomic model. With the preponderance of private development from the late 1980s onwards, apartments became a standardized technology for a streamlined city-making process.

Thus, the adoption of functionalist mass housing models during the early years of the developmental regime and their consolidation into the preferred residential model cannot be explained by density concerns only. During the developmental period, they were the bargain in the social contract that brought together the main social actors of the regime: the authoritarian state, the urban middle class and private business corporations[26]. With the neoliberal turn at the end of the 1980s, they became a generic development formula for producing housing as a spatial commodity.

23 Relevant examples are the social-democratic housing projects developed by the Amsterdam School during the 1920s, including projects by H. P. Berlage, M. Brinkman, J. J. P. Oud and M. de Klerk; the tradition of Italian architects who in the post-war period attempted to find a third way between modernism and the vernacular, many of them linked through the activities of the magazine Casabella-Continuità, such as I. Gardella, E. N. Rogers, A. Libera, F. Albini, L. Quaroni, L. Moretti and others; post-war reconstruction housing projects in France by A. Perret also pursuing a compromise between the modernist open block precepts and the traditional city, which would influence the residential projects of F. Pouillon and the Atelier de Montrouge among others; or British post-war reconstruction and urban renewal projects by architects such Chamberlain, Powell and Bon (with projects such as the Golden Lane or the Barbican Complex); to name a few. In terms of residential densities, the Justus van Effen complex designed by Michiel Brinkman in 1919 in the new Spangen neighborhood in Rotterdam achieved 200 units/Ha (Figure 25-10); while the complex Résidence du Point du Jour, designed and built between 1957 and 1963 by Fernand Pouillon on the site of a former factory in the southeast of Paris provided 328 units/Ha (Figure 25-11).

24 See '2.1 A Different Perception of Mass Housing in South Korea and in the West' in Chapter 2, Volume 01.

25 See Subchapter '21.1 Modern Architecture and Urbanism, Between the Universal and the Individual' in Chapter 21, Volume 01.

26 See Figure 5-4 in Chapter 5, Volume 01.

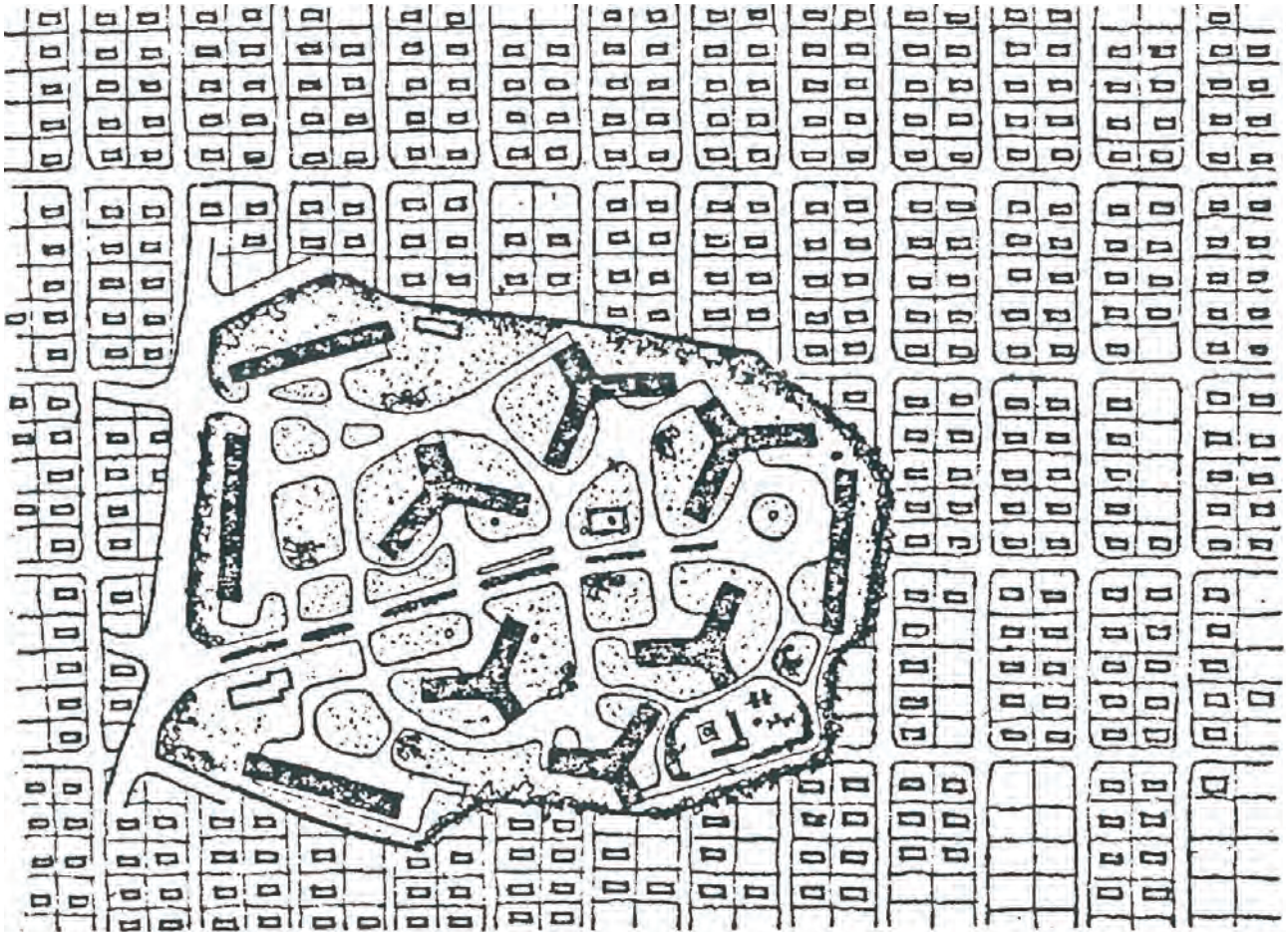


Figure 25-8. Diagram explaining the advantages of the Mapo apartments in comparison to Seoul's traditional one-storey housing fabric.
The diagram was included in an article arguing for the advantages of the apartment complexes, at a time when many voices were opposed to them.
The argument was laid out as it follows: Mapo apartments were composed of 10 buildings in a parcel of 14,008 *pyeong*. They contained 642 units, and at an average of four people per unit, they hosted 2,568 inhabitants and had plenty of open space, including green areas and a playground.
The traditional single-storey house occupied an average of 60 *pyeong*. 642 houses would take 38,520 *pyeong*, which is 2.75 times more, and still would not have any open space or common facilities. Thus, apat'u tanji were very efficient in terms of the use of space.
Source: 주택 Magazine, Issue #16, May 1966.

D. Standardization of City-Making and the Detachment of Spatial Practices from their Theoretical Foundations and Social Background.

What are the political and social assumptions behind the standardized urbanism of *apat'u tanji*, which has been presented as the only solution to the housing problem?

The particularities of the diffusion of modern planning practices in South Korea favored the borrowing of pragmatic solutions without their conceptual underpinnings and sociopolitical implications. That is, only elements from the repertoire of modern architecture that seemed useful were selected, as a means to an end. The dissociation of formal models from their theoretical or social origins has been a constant in the more propagandistic factions of modern architecture, as a way to conceal the diversity of the discipline in a homogeneous model that is ready to be exported anywhere[27].

The reduction of modern architecture and urbanism to pure physical space detached from its political or social foundations has been addressed by a number of critics, including Heidegger (Heidegger, 2001), Lefebvre (Lefebvre, 1991) and Bauman (Bauman, 1993). The main hypothesis of Jeremy Till's book 'Architecture depends' is that *"the perpetuation of physical space as an architectural paradigm is about the denial, and subsequent ridding, of those dependencies and presences that lie outside the direct control of the architect"* (Till, 2009, p. 122). He calls this physical, static, metric, neutral space 'Hard Space', and quotes Lefebvre to describe how it *"has nothing innocent about it: it answers to particular strategies and tactics; it is, quite simply, the space of the dominant mode of production, and hence the space of capitalism"* (Lefebvre, 1991. Quoted in Till, p. 132). The author concludes that *"Voided of explicit political or social content, hard space is reduced to those aspects of architecture that are easy to commodify (aesthetics and technique) or those aspects of space that are to do with control (efficiency and visibility)"* (Till, 2009, p. 123).

The qualities of hard space that dominate architectural production are precisely what have enabled the appropriation of that space by market forces. This led the author to consider the role of architects within the power systems that have dominated the modern era, reaching the conclusion that architects have been complicit in whitewashing prevailing economic interests with a wrapping of design seduction[28] (Till, 2009, p. 123).

The focus on borrowing instruments, tools and techniques from the toolbox of modern architecture and urbanism from a problem-solving approach was justified by the narrative of urgency due to the chronic housing shortage throughout the century, the lack of buildable land and the concentration of population in the capital. This perpetuated the high-modernist agenda of the city as an empirical problem to be solved by technical means through scientific planning.

The import of these functionalist approaches to the city since the 1960s was coetaneous with the criticism of these very models in the countries they were borrowed from. While modernist planning mechanisms were imported, the emerging criticism and opposition towards these models did not travel with them. This highlights the selective borrowing of techniques but not of the related ideology. A case in point is the modernist fascination with urban highways as a tool for urban regeneration. While in New York City the fierce opposition of local residents and anti-development activists led by Jane Jacobs managed to quash the construction of the Cross Manhattan Arterials plan during the first half of the 1960s, in Seoul the Cheonggyecheon Freeway was built in 1968 over the main stream of the old city, as a symbol of modernization and of the successful industrialization of the country[29].

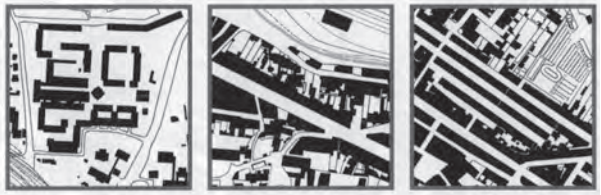
The set of planning and architectural methods assembled into a standardized urbanism of mass

27 See '9.1 Contribution of the Evolution of Mass Housing in South Korea to the Diffusion of Modern Urban Concepts', in Chapter 9, Volume 01.

28 See 'The instrumentalization of Modern Movement in the construction of everyday life' in 1.2 'Hypothesis', Chapter 1, Volume 01.

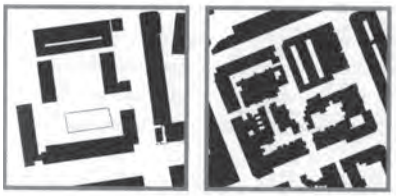
29 See Figure 25-12 to Figure 25-15 on page 411.

GROSS URBAN DENSITY from 2 to 1



Selection	La Castellane 140 x 140 m	Saint Marcel Block 200 x 200 m	Mazargues Block 200 x 200 m
Building type	Mid/high-rise housing: Slabs	Dense individual housing: Village houses	Dense individual housing: Row houses
Urban form	Post-war cluster	Dense village street	Tract housing
Location	Periphery	Periphery	Pericenter
Built block density	1.71	1.55	1.28
Number of floors	6 to 17	1 to 4	2 to 3
Dwelling density/ha	136	106	114
Human density/ha	424	180	184
Motorization rate %	63	57	63
Block coverage ratio %	27	52	63
Other %	13	4	7
Green areas %	11	26	0
Roads. Car parks inside the block %	49	8	30

GROSS URBAN DENSITY from 3 to 2



Square Victor Gélu 140 x 140 m	M5 Block 200 x 200 m
Mid-rise housing: Open block	Mid/low-rise housing Compact Block
Block core with inner streets and green areas	Old converted warehouse
Old town	Old town
2.80	2.68
7 to 8	2 to 7
228	177
365	-
57	-
46	62
32	14
0	24
22	0 (pedestrian areas)

GROSS URBAN DENSITY > 3

Selection	Grignan 140 x 140 m	Passage de Lorette 140 x 140 m	Place des Pistoles Le Panier 140 x 140 m	La Grande Corniche 140 x 140 m
Building type	Mid-rise housing: Closed/compact block	Mid-rise housing: Compact block	Mid/low-rise housing: Compact block	High-rise housing: Slab
Urban form	Renovated old block	Hausmannian block	Renovated medieval block	High-rise building
Location	Pericenter	Old town	Historical center	Inner city
Built block density	5.32	4.91	3.96	3.17
Number of floors	4 to 8	6	2 to 4	16 to 23
Dwelling density/ha	175	569	383	323
Human density/ha	282	1,053	494	-
Motorization rate %	62	27	48.5	-
Block coverage ratio %	72	90	82	18
Other %	0	10	18	56
Green areas %	28	0	0	17
Roads. Car parks inside the block %	0	0	0	9

Figure 25-9. Residential density from an analysis of different urban fabrics in Marseilles, France.
The different urban morphologies demonstrate how similar residential densities can be achieved with different urban fabrics and building typologies.
Source: Salat, S. (2011).

housing estates were thus detached from their original sociopolitical contents in order to be used as practical design toolbox to solve specific problems. However, as Till revealed in an update of Henri Lefebvre's work, architecture is political in that it affects the lives of citizens (Till, 2009, p. 124). Space is not neutral but imbued with social underpinnings.

The sociopolitical assumptions behind the standardized urbanism of mass housing can be grouped into two types: those related to the roles of the public and private sectors in city-making and those related to understanding city-making as problem-solving from a scientific management approach. The latter are associated with the standardization of solutions and the subordination of social aspects to technical or spatial ones.

D.1 Privatization of city-making

It is clear from the series of maps featuring the evolution of mass housing in Seoul[30] that the scale of implementation has been much greater than in Western contexts[31]. Nevertheless, this has not been due to extensive public housing programs; quite the contrary. As opposed to Western counterparts and even to other East Asian developmental states, mass housing in Seoul has been largely market-driven and aimed at facilitating access to home ownership for the working classes. By minimizing public expenditure on housing and relegating its provision to private companies, large swathes of the city have fallen into the interests of the large private conglomerates – *the chaebol*.

After World War II, public mass housing estates in Europe reflected the social compromise of the welfare state and at the same time helped accelerate the recovery of the economy. Despite their shared developmental regimes, the four Asian Tigers (South Korea, Singapore, Taiwan and Hong Kong) had very different approaches to housing policy. While Singapore and Hong Kong pursued aggressive public housing policies as strategies for economic growth and social integration, Taiwan and South Korea prioritized industrial growth over housing supply (Kim, 2014, pp. 98-99). Public housing in the Western sense did not exist. As in other developing countries, squatter settlements mitigated the housing shortage for low-income households in Seoul well up until the 1990s.

The government tried to provide public housing through the 'citizen's apartments' project[32], but the policy only lasted three years: from 1969 to 1972. The collapse of the Wow apartments in 1970 triggered a fundamental shift in housing policy: from then on, private companies would take care of the provision of mass housing following the strict price controls and deadlines of the administration, while the latter would focus on furnishing financial and institutional support to ensure the conditions for capital accumulation. This

30 See Chapter 4 in Volume 02.
31 Figure 1-5 in Chapter 1, Volume 02.
32 시민 아파트, see '3.6 Citizen's Apartments Project' in Chapter 3, Volume 02.

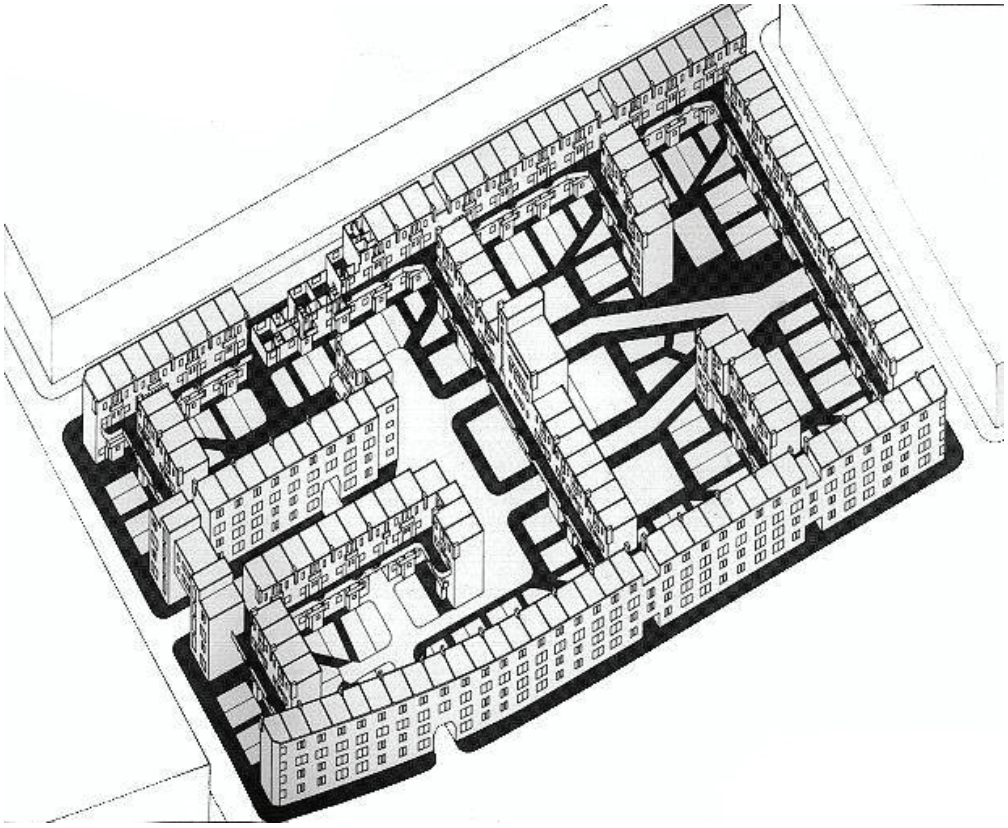


Figure 25-10. Alternatives to the residential open blocks based on la Charte d'Athènes: Justus van Effen quarter, Michiel Brinkman, Rotterdam, 1919-1922.
Source: unknown.

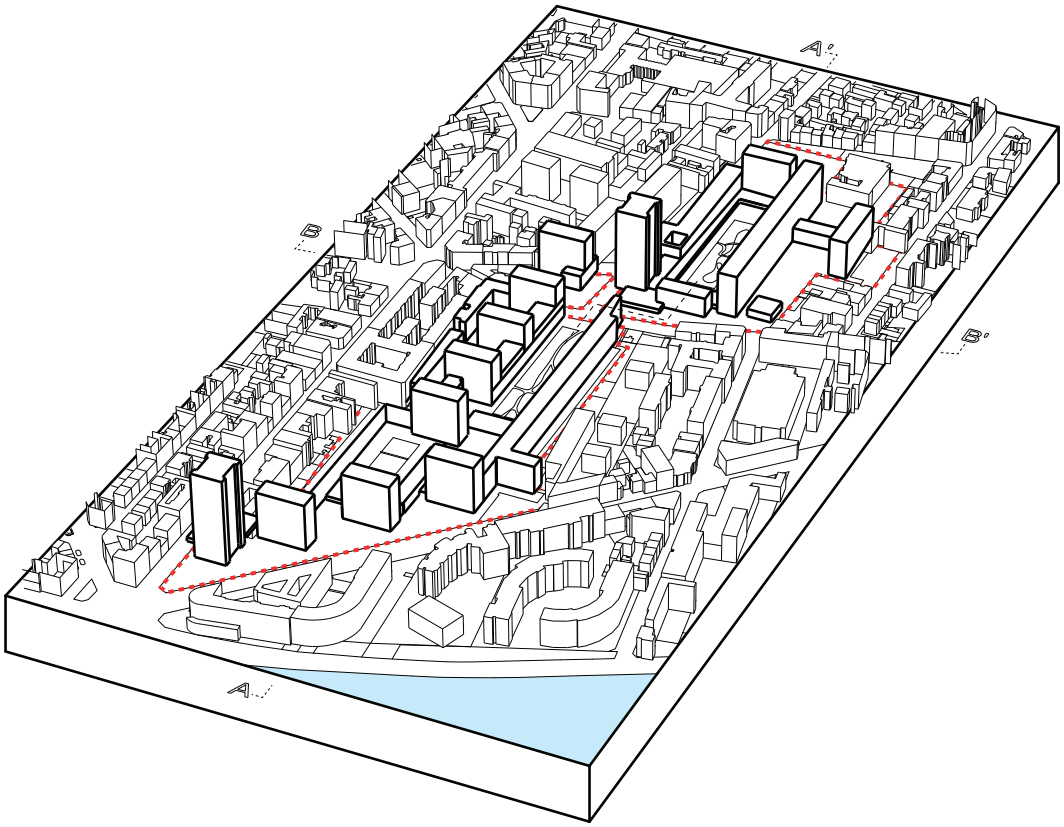


Figure 25-11. Alternatives to the residential open blocks based on la Charte d'Athènes: complex Résidence du Point du Jour, Fernand Pouillon, Paris, 1957-1963.
Source: Carrié, B., & Masse, S. (2015).

deal exemplifies the South Korean developmental coalition between the administration and the large business conglomerates (the chaebol, 재벌) to deliver economic growth, which was necessary to establish the government's political legitimacy[33]. Once the responsibility for the construction of mass housing had shifted to the private sector, the principle of housing affordability was replaced by profitability. Consequently, there was also a shift in the target population, as housing for the poor was unprofitable. By delegating the provision of housing to the private sector, the state severely reduced its control over real estate speculation. The privatization of the provision of housing, the lack of mechanisms to curb real estate speculation and the shift towards providing mass housing for the emerging urban middle class for profit increased housing prices and perpetuated the housing crisis, crippling the equal distribution of wealth and threatening social stability (B.-G. Park, 1998). With the privatization of housing supply, apartments became symbols of belonging to the new urban middle class and thus of status.

This does not mean that there was no subsidized housing: the difference between European welfare states and the so-called 'productivist welfare regimes' was that social policies were related to economic growth rather than to social rights. Thus, during the decades of high economic growth (from the 1960s until the late 1990s), housing was subsidized based on purchasing power. That is why developmental housing policies have been called a 'factory for the middle class', while at the same time they favored low public expenditure with minimum social protection measures[34].

Public housing policies in South Korea did not start in earnest until 1989. That is quite late compared to European welfare states, although supply has increased in recent years (Kim, 2014, p. 102). From 1972, the government provided rental units at below-market prices through the Korean National Housing Corporation (KNHC). Nevertheless, most of them were meant to be sold for profit after one or five years of lease, so it is difficult to see the KNHC as a public agency during this period, due to its focus on profit (B.-G. Park, 1998, p. 278). In 1985, the housing supply rate was still 55.3%[35]. Due to speculation on land and housing prices, after the 1988 Olympic Games the price of private apartments escalated beyond the reach of many. The social unrest triggered by the housing crisis only heightened other issues such as labor disputes, demands for wage increases and unstable prices. The combination of these issues made the ruling party lose the elections the same year (E.-c. Park, 2015). Finally, the government understood that the supply of housing could not be left to the private sector. In 1989, the government unveiled the 'Two Million Housing Construction Plan' (주택 200만 호 건설 정책), which included different types of public housing in the five new satellite cities in the metropolitan area. Although there have been discrepancies in the actual definition of 'public housing' as a result of political administrations changing every five years, the supply has continued to grow since 1989. After the 1997 Asian financial crisis, public unrest related to rising housing prices and the increasing phenomenon of an aging population challenged the validity of property-based welfare systems (Kim, 2014, p. 104). By the end of 2012, public housing accounted for 5% of all households, a level similar to Japan (Kim, 2014, p. 97). In comparison, the percentage in European welfare regimes is around 10% (E.-c. Park, 2015, p. 14).

A focus on economic profit and the privatization of such a large part of the city, including residential buildings and related streets, green spaces, parking areas, leisure facilities, daily amenities, commercial facilities, waste management and other elements, have favored the perception of mass housing as a financial investment. This has been a major source of real estate speculation, resulting in social and spatial segregation and social conflicts. The South Korean developmental approach to delegate the provision of housing to the markets is an early case of the effects of the neoliber-

33 See '2.2 East Asia and the Developmental State' in Chapter 2, Volume 01.

34 See '2.3 Housing the East Asian Miracle: Developmental Housing Policies' in Chapter 2, Volume 01.

35 See Figure 4-3 in Chapter 4, Volume 01.

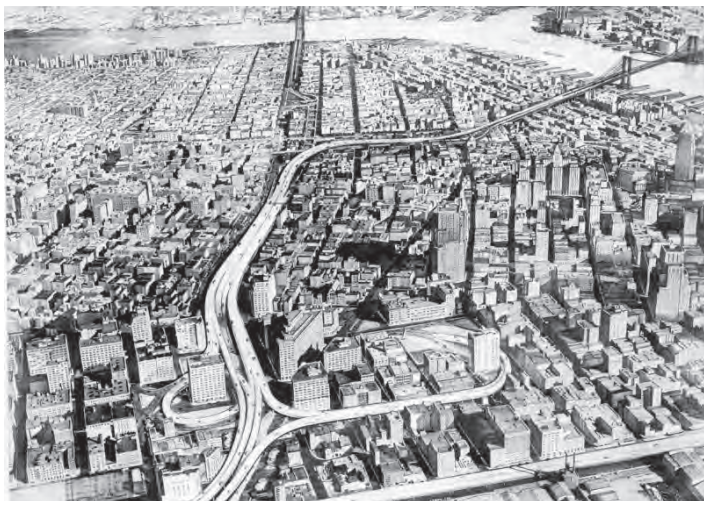


Figure 25-12. Bird's eye view of the proposed Lower Manhattan Expressway.
Source: Triborough Bridge and Tunnel Authority.

Figure 25-13. Plan of the Lower Manhattan Expressway.
Drawing by Paul Rudolph (Library of Congress), Public domain.

Figure 25-14. View of the Cheonggyecheon elevated highway through downtown Seoul after completion, 1969.
Source: Seoul Museum of History (서울역사박물관).

Figure 25-15. Proposal for the modernization of the road infrastructure in downtown Seoul, 1968.
Source: Seoul Museum of History (서울역사박물관).

al turn since the 1980s on the built environment. Interestingly, since 1989, the Korean government has started to invest in public housing, reversing the general trend towards the neoliberalization of the provision of housing experienced in recent decades in Western welfare states.

One of the most challenging limitations associated with the privatization of mass housing has been in the area of inner-city renewal. By relegating the renovation of decaying urban fabrics to Joint Redevelopment projects since 1983[36], the emphasis has been put on economic profitability, leaving aside larger infrastructural, social and environmental issues that require a vision beyond the scale of individual housing estates.

D.2 Urbanism as Problem-Solving: The Challenges of Standardization

Since mass housing was adopted later in South Korea than in Europe, America and even other East Asian countries such as Japan, Hong Kong or Singapore, there was already a wide range of tried and tested planning and architectural solutions available to be imported and implemented. Over a process of trial and error, planning and design formulas that optimized production by lowering costs, expediting times and ensuring financial feasibility were favored, streamlining the production of mass housing into a standardized process.

This approach borrowed from Western modern urbanism the implementation of industrial logics to organize the city:

- Taylorism or the systematization of industrial processes through specialization. The separation and simplification of tasks meant they could be more profitable. From the end of the nineteenth century, modern urbanism adopted this systematization through zoning and the separation of urban functions.
- Fordism or the combined system of mass production and consumption.

François Ascher has called the urbanism of the second urban revolution 'Fordist-Keynesian-Corbusian'. It is characterized by an over-simplifying rationalism based on urban planning, mono-functional zoning and hierarchical urban structures (Ascher, 2007, p. 27).

Architect and theorist Christopher Alexander criticized the standardization of modern urbanism and blamed the failure of 'artificial' cities (deliberately created by designers and planners, as opposed to natural or spontaneous cities) to become receptacles for human life in their inability to encompass the complexity and richness of the

36 See '8. Mass housing as a tool for inner city renewal' in Chapter 7, Section 01.

living city[37] (Alexander, 1965).

His criticism of the description of the city in terms of hierarchies of social units at different scales fits particularly well with the implementation of neighborhood units and the theory of living zones in South Korea. According to the author, *"When we describe the city in terms of neighborhoods, we implicitly assume that the smaller elements within any one of these neighborhoods belong together so tightly that they only interact with elements in other neighborhoods through the medium of the neighborhoods to which they themselves belong. […] this is not the case."* Furthermore, he included some of the key references in the development of the urbanism of *apat'u tanji* in Seoul as paradigmatic examples of tree structures: Greenbelt Maryland by Clarence Stein (1935), the Greater London Plan by Abercrombie and Forshaw (1943) and the Tokyo Bay Plan by Kenzo Tange (1957-58), among others.

Designing the city through formulas for efficiency from a problem-solving mindset can be problematic once the initial conditions that triggered the intervention change. The standardized formula for mass housing was based on a paradigm of constant economic, demographic and urban growth that reflected the modern ambition to define and control the future. However, it was challenged once the economy stabilized, population declined, households diversified and buildable land was depleted[38]. The main challenges brought by this process of standardization have been:

- The high degree of specialization of the urbanism of mass housing left no room for embedded flexibility that could adapt to future changes.
- The common practice of substituting decaying urban fabrics for *apat'u tanji* cannot be taken for granted any more. The lifecycle of residential quarters including mass housing estates is being extended, bringing to the fore issues of maintenance, renovation and even preservation of modern heritage that had not been contemplated before.

37 According to Alexander, a standardized, hierarchical spatial unit could not reflect the complexity of social systems. He described the social interactions in a city through the formal paradigm of the semi-lattice. By identifying social systems in a given neighborhood (representing, for instance, schools, youth clubs, community centers, post offices, greengrocers, etc.), he described the groups of users in each system. He then showed how the different groups (or 'units') did not coincide, but were not disjointed. They simply overlapped, reflecting a highly complex and subtle social structure. However, by using experiments in visual perception, he proved how people tend to mentally simplify any complex organization into hierarchical collections of sets in which there is no overlap. He called these 'trees'. That is, no piece of any unit is ever directly connected to other units, except through the medium of that unit as a whole (see Figure 25-16 and Figure 25-17). He went on to argue that the limited capacity of the mind to form intuitively accessible structures prevented designers from encompassing the complexity of the semi-lattice in a convenient mental form. Hence, they defaulted to a tree conception. For the author, this process of mental simplification crippled contemporary conceptions of the city.

38 See subchapter '1.5 Geographical Scope and Period of Study' in Chapter 1, Volume 01.

D.3 Urbanism as Problem-Solving: Housing as Packages of Housing Units

> *"The history of cities and the most recent studies demonstrate that the mere accumulation of housing, even to the scale of hundreds of thousands, is not enough to create a city."*
>
> (Huet, 2013, p. 138).

Apat'u tanji have been conceived as housing packages that include the necessary amenities for daily needs, a reinterpretation of Clarence Perry's original 'neighborhood unit' concept. Despite their relative autonomy from the rest of the city, they were not meant to be self-sustained communities as in Howard's conception of the Garden City[39]. They were not mixed-use communities including workplaces for inhabitants. Instead, they follow the strict separation of uses of the modernist urban paradigm. Thus, especially in the case of the large new towns and satellite cities composed of arrangements of multiple *apat'u tanji*, they stand as large bedroom communities catering to commuter lifestyles.

While their relatively high residential density would be considered a positive factor in terms of today's standards for sustainability, their dedication to a single use, the lack of urban diversity, the minimal provision of public housing and the forced mobility they imply are below contemporary sustainable urban development standards, as described in the United Nations' New Urban Agenda (Habitat III) 'Sustainable Developmental Goals' (SDG)[40], among others. Contemporary approaches to the built environment have changed due to the resources and energy crisis. A new awareness and increased social and environmental responsibility call for the evaluation of buildings according to their performance, favoring the adaptive reuse of existing structures rather than *tabula rasa* approaches to urban regeneration.

E. A Modern Vernacular Architecture?

The hybridization of imported lifestyles and traditional ways of living in the development of the Korean nLDK system gave rise to a highly standardized unit type that problematizes the concept of 'vernacular'. For Bernard Rudofsky, 'vernacular' did not mean 'uncivilized' or 'primitive', but an intuitive and simple form of problem-solving that took into account user needs through the spontaneous manipulation of the environment (Rudofsky, 1999).

Of course, apartments were not adopted in South Korea in an intuitive, unconscious manner. There was a great deal of thought and development behind them. However, once the modern lifestyle revolution had taken place and they were established as the preferred housing choice of the middle class, the nLDK system adopted characteristics commonly attributed to vernacular architecture: adaptation to local needs and climate reflecting local traditions, purpose-oriented, avoiding the use of stylistic elements beyond functional requirements, dedicated to residences for common people, devoid of authorship and outside the academic mainstream.

The architect and critic Santiago de Molina has claimed 'vernacular' should not be understood as popular, poor, cheap or lacking in sophistication, since its Latin origin, *vernacŭlus*, meant domestic, native, indigenous or home-born (de Molina, 2019). The use of the term vernacular in reference to the nLDK system encapsulates a series of embedded tensions present throughout the development of mass housing in South Korea: global solutions versus local interpretations, conscious (or critical) adaptations versus unconscious (or a-critical) ones, modernity versus tradition or high architecture versus architecture of the everyday outside the academic mainstream. These tensions point to the fact that Korean society does not perceive apartments as an architectural topic and at the role of architects in their development as outlined in the hypothesis of the research[41].

39 See '8.6 The Neighborhood Unit and its Evolution to the Living Zone Theory' in Chapter 8, Volume 01.

40 https://www.un.org/sustainabledevelopment/blog/2016/10/newurbanagenda/

41 See '1.2 Hypothesis', in Chapter 1, Volume 01.

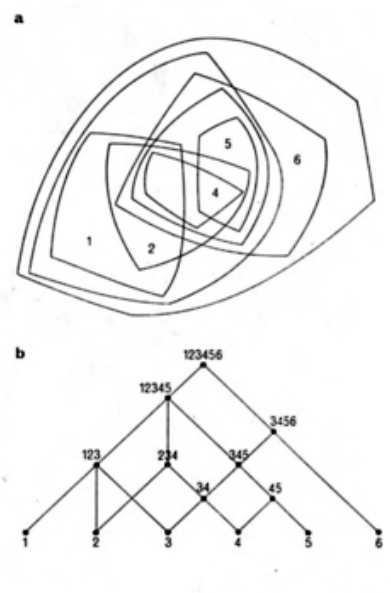


Figure 25-16. Semilattice structure.
Diagrams A and B illustrate a semilattice structure, defined by the axiom: *"A collection of sets forms a semilattice if and only if, when two overlapping sets belong to the collection, the set of elements common to both also belongs to the collection."*
Diagrams by Nikos Salingaros.

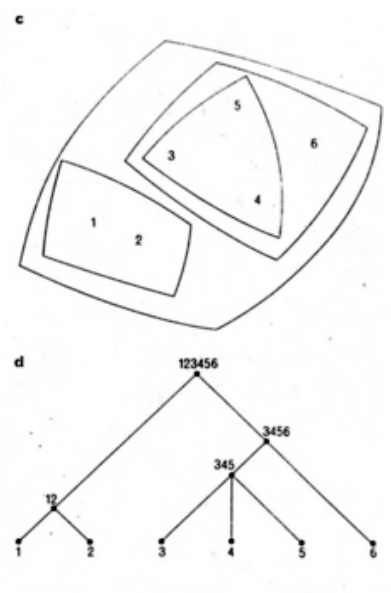


Figure 25-17. Tree structure.
Diagrams C and D illustrate a tree structure, according to the axiom: *"A collection of sets forms a tree if and only if, for any two sets that belong to the collection either one is wholly contained in the other, or else they are wholly disjoint."*
Diagrams by Nikos Salingaros.

F. The Alienation of Architects From Mass Housing

Mass housing provided a unique opportunity to develop the Modern Movement in architecture, not only as a source of income, but also as a pedagogical opportunity and a means to invest architects with a new social role as messengers of modernity. However, towards the mid-twentieth century, once the post-war reconstruction effort had ended, the CIAM had been dissolved and the urban solutions of the Modern Movement were widely criticized, architects stopped discussing mass housing and began to focus on the individual and on the spectacular[42].

This presents a dilemma: on the one hand, there is a clear need to deal with the topic of collective housing, while on the other, the profession seems uninterested. Who, then, is taking charge of the matter? Who is making decisions on housing? If, as Aldo Rossi stated, private housing is the main feature of the city (Rossi, 1995), who is making decisions on cities, and how are those decisions made?

Under the developmental economic model, the various agencies involved in the complex network of housing estate production took over the traditional role of architects in design and construction processes. By engaging in the financing, development, management and construction of mass housing, including land acquisition, provision of infrastructure and services, provision of transportation, construction of housing and the required facilities, etc., these agencies became the guarantors of a project's economic state of health. The dictatorship and political repression during the 1970s and 1980s put paid to any possible criticism of the development model (Gelezéau, 2003, p. 168).

Significant exceptions to this alienation process are Joh Sung-yong, who designed the 1986 Asian Athletic Games Village after winning a design competition[43], and Woo Kyu-sung, who in 1985 won the competition to design the Olympic village for the 1988 Olympic Games in Seoul[44]. Their designs remain a high mark in the evolution of Korean mass housing due to their internal distribution, the separation of circulations, the quality of the amenities and open spaces, the integration of commercial facilities, the definition of gradients of privacy and the relationship with the surroundings. Since the end of the 1990s, the neoliberal turn and the shift of the development of mass housing to the private sector further alienated architects from mass housing.

Today's architects are responsible only for the decor, the formal aspects of a consumer good that operates outside its remit in the most essential aspects: housing as a social object (Préteceille, 1973, p. 54) and as part of the urban ecological system. The most blatant example of this trend is when Korean construction companies commission internationally acclaimed architects to design only the facades of their apartment blocks to make them stand out from the competition[45].

It is also common practice to commission the design of model houses to renowned architects. Model houses are temporary buildings that construction firms build to advertise specific complexes. The marketing strategies include producing full-scale models of the interior, creating a carefully crafted brand image that defines a unique way of life for the different product lines, exhibiting cutting-edge technologies to be used in the buildings. The innovative and spectacular design of the model houses is, in fact, the antithesis of the homes being sold[46].

42 As Santiago de Molina explained: *"Interestingly, since the Guggenheim was built and the period of 'architectural spectacles' had begun, the contribution made by 'superstars' to the development of housing has been limited to only a few cases.… Of the projects built by major studios in recent decades, a tiny proportion were exclusively for housing.… A simple conclusion can be drawn from this: the vanguard's interest for collective housing is non-existent"* (de Molina, 2011).

43 See Chapter 14 in Volume 02.

44 See Chapter 15 in Volume 02.

45 See Figure 25-18.

46 See Figure 25-19.

Figure 25-18. l'Park City, a residential complex with facades designed by UN Studio in Suwon (southern Seoul) for the Hyundai Development Company, 2008.
Image from the Image from the architect's website, *http://www.unstudio.*

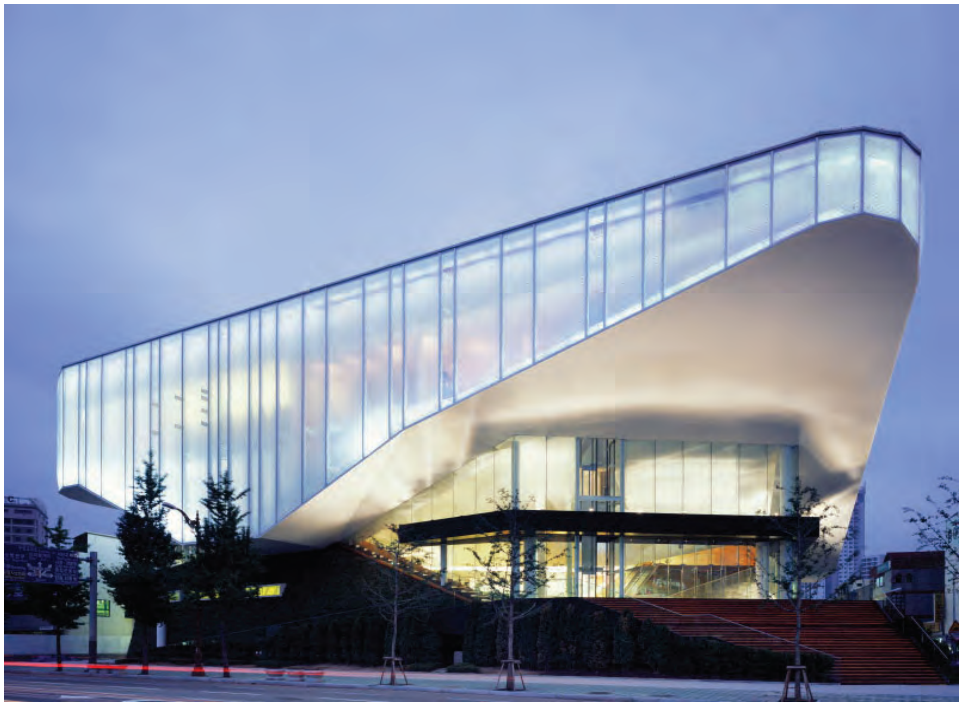


Figure 25-19. Xi Gallery model house by Mass Studies in Yeonsan-dong (Busan) for the GS Construction Company, 2007.
Image from the architect's website, *http://www.massstudies.com.*

G. Towards a New Urban Paradigm

One of the main hypotheses framing the research is the identification of a shift in the socioeconomic milieu that brought about the emergence and generalization of mass housing in Seoul[47]. The 2008 financial crisis confirmed the economic growth initiated by the developmental policies of President Park Chung-hee's regime in 1962 was slowing down. At the same time, the chronic housing shortage during the twentieth century had been finally overcome, while acute demographic changes and the diversification of household arrangements pointed at fundamental changes in domestic environments[48].

Seoul's mass housing estates have accomplished their mission: to provide housing in the most efficient and prosaic way within a context of demographic boom, lack of buildable land and shortage of public funding. The economic slowdown and the transition from industrial capitalism to a cognitive one reflected a shift towards a new stage of the modernization process[49]. This has brought about a shift of urban paradigm from the belief in infinite progress, resources and growth to an increasing awareness of the need to preserve natural resources and the social and cultural heritage[50]. This shift was one of the main triggers of the investigation and bookends the research period[51].

The research findings and their discussion point at directions for this new urban paradigm in relation to mass housing: the need for a holistic urban vision that articulates the relationship of mass housing with the rest of the city independently from electoral terms; a greater public intervention in decisions about housing and the city, according to the aforementioned urban vision through specific physical plans in the short and medium term; the right to adequate housing by the most disadvantaged groups in society; reinstatement of the role of the public housing administration as an instigator of research and innovation projects in the field of mass housing and the rehabilitation of apartment complexes, with links to the academic and professional world[52]; exploration of alternatives to mass housing estates as default residential formats, adapted to their specific urban and social contexts; a renewed social role for architects based on their professional critical acumen; the introduction of new programs in mass housing estates in order to transform bounded bedroom enclaves into thriving mixed-use communities; and the definition of criteria for the preservation and renovation of apartment complexes as modern architectural heritage.

25.3 RECOMMENDATIONS FOR FUTURE RESEARCH

The development of this research and its findings have raised new questions that could not be asked at the outset. These questions are proof of the relevance of the thesis to conversations that extend beyond the original scope and remain to be pursued in other investigations.

The following recommendations for future research expand on the methodology developed, examine this methodology in a new context or propose the exploration of new avenues uncovered during the development of the thesis.

A. Expanding on the methodology:

- **Mass housing and the construction of the satellite cities in the Metropolitan Area.** An understanding of the mass housing phenomenon in Seoul cannot be complete without looking at the development of the satellite cities constructed beyond the greenbelt since the early 1990s[53]. Their planning brought a change of scale from the more or less compact city to the scale of the metropolis, as they had to be articulated with the capital but also with other existing urban centers, regional infrastructures and natural resources. While beyond the scope of this research, extending the

47 See Hypothesis C in '1.2 Hypotheses', Chapter 1, Volume 01.
48 See '1.5 Geographical Scope and Period of Study' in Chapter 1, Volume 01.
49 See '1.1 Thesis' in Chapter 1, Volume 01.
50 Ibid.
51 See '1.5 Geographical Scope and Period of Study' in Chapter 1, Volume 01.
52 Such as the Singapore's Housing and Develoment Board (HBD) or the Hong Kong Housing Authority (HA).
53 See Figure 1-18 in Chapter 1, Volume 02.

research to these satellite cities would afford an understanding of the metropolitan area of Seoul. It would also provide valuable insights into how mass housing as a technology for the standardization of city-making was implemented at a larger scale than within municipal boundaries, and arguably about the new spatial models deployed to achieve this.

- **Exploring intermediate scales.** The decision to focus on three specific scales of the mass housing phenomenon in Seoul – the urban scale, the scale of the housing complex and the scale of the building typology-unit layout – leaves aside intermediate scales that would be worth exploring. In particular, there is a field of research in terms of the relationships between *apat'u tanji* and their urban contexts. Mass housing estates are located in a range of urban conditions. They might be part of a mass housing district or they may stand surrounded by other types of residential fabrics. Understanding the dynamics between the housing complexes and their surrounding neighborhoods over time from a morphological point of view and in relation to common infrastructures, amenities, and open spaces would furnish valuable insights into the processes of urban development in Seoul and inform their future evolution.
- **Extending the research at the scale of the housing complex to other case studies.** The analysis of cases studies in architecture and urbanism is a fundamental methodology to compare research from other sources including documents, interviews and archival analysis, among others, in a real-life context with a deeper and more detailed investigation. Nevertheless, results depend greatly on the selection of case studies. The choice of the twelve cases featured in 'Section 3, The Scale of the Housing Complex' was based on archival research and interviews with experts. The goal was to illustrate key moments in the development of *apat'u tanji* over the study period, according to the phases established in the research[54]. But given the amount of apartment complexes built during the study period, expanding the research to more cases would allow fine-tuning of the evolution of the model as well as the detection of wild cards and evolutionary trends that were discarded or lost. It might also help reveal more housing influences borrowed from abroad.

B. Examining the methodology in a new context:

- Testing the methodology of analysis of mass housing at different scales in other East Asian developmental regimes such as Singapore, Taiwan, Hong Kong, Japan and China would help refine it. At the same time, the synthesis of their similarities and differences would contribute to defining a distinct body of knowledge on East-Asian developmental mass housing.

C. Exploring new avenues uncovered during the development of the research:

- **Developmental linear urbanism.** At different times in the course of the research, mention is made of an interdependent relationship between mass housing and transportation networks, which define linear structures of urban growth. This linearity is related both to development along transportation corridors and to the need to adapt to the strong topography of the peninsula by urbanizing the lowlands along valleys, and is shown at the scale of the whole country[55], at the scale of the metropolitan area[56], and in the sequence of maps illustrating the implementation of mass housing in Seoul over time[57]. One of the strategies adopted to deploy mass housing as a standardized technology for city-making is 'Linear Structures of Growth'[58]. However, further research is necessary to define a linear urbanism characteristic of the developmental period.

54 See Chapter 6, Volume 01.
55 See Figure 1-13 in Chapter 1, Volume 02.
56 See Figure 1-17 in Chapter 1, Volume 02.
57 See Chapter 6, Volume 02.
58 See Subchapter 8.7 in Chapter 8, Volume 01.

- **Alternatives to blank-slate urban renewal.** As explained in the selection of the study period[59], various symptoms emerged after the 2008 financial downturn, pointing at a crisis of the mass housing model in Seoul. These were the overcoming of the housing shortage, changes in the structure of households, negative population growth, a real estate bubble, changes in municipal housing policy in support of alternative housing typologies and the gradual cancellation of inner-city urban renewal projects[60]. One of the likely consequences of such a paradigm shift is that urban renewal through tabula rasa-style Joint Redevelopment processes[61] for entire neighborhoods through mass housing will not be feasible anymore. New approaches to urban regeneration will need to be investigated that address the shortcomings of the previous model by preserving existing buildings and communities, integrating housing estates with their urban context, considering the right to housing for the disadvantaged, incorporating sustainable strategies and supporting diverse and plural neighborhoods through a mixture of uses.
- **Mass housing as modern architectural heritage.** An issue related to the previous point is the preservation of *apat'u tanji*. The mass housing estates where 53% of the population of Seoul lives have an in-built expiry date linked to the economic cycles of urban regeneration and to the expectation of an increase in real estate value. At a point when these cycles cannot be taken for granted anymore, the development of new strategies for the maintenance, transformation and adaptation of this enormous built stock become extremely relevant. This is linked to a new awareness of *apat'u tanji* as modern architectural heritage and to the development of guidelines to decide which features should be preserved.
- **The spatial implications of recent gentrification processes through mass housing.** The 'New Town Initiative' ushered in by Mayor Lee Myung-bak in 2002 to improve inner city decaying neighborhoods through the construction of new mass housing estates proved to be a financial success in the three pilot projects it was tested on. This inspired dozens of similar renewal projects initiated by private developers under the guidance of the local administration, which unfolded into a massive process of urban gentrification and social segregation, since no measures were put in place to protect the original tenants. Up until 2011, 26 areas were earmarked, amounting to 24 million m2 and involving approximately 250,000 residents[62]. The project has been gradually cancelled by Mayor Park Won-soon since 2011, but the impact of this 'geography of gentrification' in the structure of the city and its social implications still remains to be evaluated.
- **The diffusion of the Korean mass housing model to developing economies.** Due to their fast and profitable development, Korean new towns based on mass housing complexes are seen as role models for urban growth in developing economies in South East Asia, Central Asia, the Middle East, Africa and South America[63]. Beyond their economic and organizational success, the investigation of how the South Korean contributions to the field of mass housing could be adapted to the local specificities of these locations opens up a new research arena.
- **Mass housing estates and urban sustainability.** The performance in terms of sustainability of Seoul's mass housing has not been addressed in the research. The evolution of *apat'u tanji* in Seoul during the second half of the twentieth century took place in parallel to an increasing awareness of the environmental crisis, and the central role cities play in the consumption of resources and the genera-

59 See Subchapter 1.5 in Chapter 1, Volume 01.
60 See '3.16 New Town in Town Project, 2002' in Chapter 3, Volume 02.
61 See '8. Mass Housing as a Tool for Inner City Renewal', in Chapter 7, Volume 01.
62 See '3.16 New Town Initiative, 2002', in Chapter 03, Volume 02.
63 As expressed in '1.3.2 Mass Housing Know-how and the Exportation of Mass Housing Models', in subchapter '1.3 Relevance', Chapter 1, Volume 01.

tion of emissions. Due to their self-contained character as urban fragments, apartment complexes are uniquely suited to develop criteria to evaluate the sustainability of urban areas. While high residential density is generally assumed to be a good indicator of urban sustainability, other characteristics of *apat'u tanji* do not comply with widely accepted standards of a sustainable urban community: *tabula rasa*-style redevelopment, limited social protection measures, mono-functional character, forced mobility, isolation from their context, etc. These criteria would allow an assessment of the performance of different types of complexes and to outline guidelines for their regeneration.

- **Mass housing and the neoliberal turn.** The shift of the provision of mass housing to the private sector since the late 1980s in South Korea was not an isolated phenomenon. The decade of the 1980s saw a global shift towards neoliberal governance that relegated the provision of affordable housing to the markets, in parallel to a general disengagement by the architectural profession. In the meantime, the world was urbanized at an increasingly faster pace. The 2008 global financial downturn evidenced that the crisis of affordable housing and the commodification of the city were not side-effects of contemporary global capitalism, but rather, some of the main processes driving it (Madden & Marcuse, 2016, p. 8). While addressing the shortcomings of neoliberal spatial development is a wide systemic issue related to the current political economy, its implications on housing as a social space, the definition of the city as a commons and the role of architects in all this are an emerging and necessary field of research.
- **The international diffusion of mass housing models, the production of knowledge and the relevance of modern architecture and urbanism.** The diffusion of mass housing models revolves around a dialectical tension. On the one hand, there is the search for universal solutions, and on the other the adaptation of models to the particularities of each specific context. With each local appropriation, adaptation and reinterpretation, the original concept is updated with new layers of meaning. Some examples of such models discussed in the research are the concept of 'neighborhood unit' or that of 'new town'. Their widespread adoption around the globe has turned them into global urban forms (Lu, 2006).

  Borrowing from Edward Said (Said, 1983), the production of knowledge through the movement of ideas in different cultural contexts opens up a relevant research agenda for architecture and urbanism. It allows us to reevaluate modern mass housing not as an exhausted model from a Western perspective, but as an ongoing project still in absolute full force in other settings.

GLOSSARY

ADF (Asian Development Fund): Institution that bridges the development gap in Asia and the Pacific, home to both the world's fast-rising and most vulnerable economies. The fund is a major instrument of concessional financing that has supported equitable and sustainable development in the region since 1973. Funded by the Asian Development Bank's member countries, it offers loans at very low interest rates as well as grants to help reduce poverty in ADB's poorest member countries.

Bansanghoe (반상회): Neighborhood meeting.

Binilhaus (비닐하우스): Literally meaning a "vinyl house", this is a relatively new type of informal home based on adapting greenhouses in non-developable agricultural zones (generally in Seoul's greenbelt).

Binilhauschon (비닐하우스촌): An informal settlement formed by the accumulation of binilhaus, many of which were built after 1981. The informal nature of these homes makes them difficult to document, but a field study on these new communities identified 3,446 homes (with 6,752 residents) within the municipality in 2002 (Ha, 2008).

Block or guyeok (블록,구역): Urban block.

Bokbooin (복부인): Middle-aged women who speculates in real estate. The character emerged during the years of fast economic growth and urban explosion, when non-working housewifes would engage in real estate transactions, especially related to apartments. The expression was popularized after a 1980 movie with a homonymous title.

Bokdoshik (복도식): Building which is accessed through a shared corridor.

Bunyang (분양): Lotting-out.

Bunyeohoe (부녀회): Association of housewifes in an *apat'u tanji*.

Captive customer base: A consumer group with access to a limited range of products. This type of market is common during times of industrial growth, in which there is a limited supply of goods and high demand, and is referred to as a monopoly market.

Chaebol (재벌): A family-run group of companies that exercise monopoly control on industrial sectors and product lines (Woo, 1991, p. 326). The founders of the chaebol were mainly from well-off landowner families. All, without exception, began as family conglomerates, and even today, 70% are still controlled by the original families. Like in any other aristocratic environment, the chaebol groups strategically marry within the family to maintain control (Cumings, 2005, p. 327). They emerged out of the need to finance the country's development as part of Park Chung-hee's economic policies. Faced with a lack of

state capital, the president established agreements with entrepreneurs, who could continue their businesses and receive a range of benefits in exchange for following government guidelines. These partnerships that formed between the state and private companies in order to force the emergence of a capitalist economy are typical of the developmental states and are based on the Japanese zaibatsu. However, a "free-market economy" did not really emerge. Large, internationally known producers of electronic goods and cars, as well as construction firms, belong to these partnerships, including LG, Samsung, Hyundai, Daewoo and Kia.

Chib (집): House, home.

Chuche (주재): Resident.

Confucianism: An ethical and philosophical system based around the teachings of the Chinese philosopher Confucius (551–479 BC). Confucianism is based on a form of humanism centered on earthly life and the family, rather than on gods and the afterlife. This attitude is based on the belief that humans can perfect themselves through personal and collective effort. It became China's state ideology during the Han Dynasty. Later, during the Tang Dynasty, Confucianism absorbed certain aspects of Buddhism and Taoism. This Neo-Confucianism became a rigid orthodoxy that dominated the scholar-official class during the Song Dynasty. The importance of Confucianism gradually faded with the arrival of communism to China. Historically, it spread to many other countries, including Taiwan, Hong Kong, Macau, Korea, Japan, Singapore and Vietnam, and some attribute the East Asian economic boom in the late 20th century to Confucianism.

Dal dongnae (달동네): Poor hillside village, or informal settlement located on the hills. The Korean expression means, literally, 'village of the moon', expressing their inaccessible condition.

Golmok (골목): Alley.

Gyeongseong (경성): Japanese name for colonial Seoul.

Hyodo (효도): Concept of filial piety in the Confucionist tradition, based on the respect for one's parents, the elderly, and one's ancestors.

Jeonse (전세): Also denominated 'Key Money Deposit'. Lease system unique to Korea where a renter deposits a lump-sum deposit on a rental space in advance, without further payments for the rest of the lease term - generally two years. This 'key money' is usually 50% of the value of the property, and the renter gets it back at the end of the lease term. The landlord makes a profit by investing the sum and cashing the interests yielded.

Kyedanshik (계단식): Building which is accessed through a staircase.

National Housing Fund - Housing Lottery (NHF) (국민주택기금 -주택복권): Government-based fund established under the Comprehensive Housing Construction Plan to enhance the stability and quality of housing for Korean people. The National Public Housing Fund is the heart of South Korea's public housing

finance. The Fund was first created in 1981 pursuant to the Housing Construction Promotion Act. Before then, the housing funds were used to issue housing bonds and build houses, but the lack of financing resulted in only negligible results. The National Public Housing Fund is funded by government contributions, money from issued National Housing Bonds and housing lottery tickets, deposits from the general financial market and National Public Housing Fund bonds, and housing savings accounts which give priority for housing to its holders. The proportion each is responsible for varies according to the circumstances of the market. In 2005 when the housing market was booming, housing bonds provided a high percentage of funding. In 2010 however, there were more funds on standby from housing sales (such as through the housing savings accounts) than from other sources.

Panjachib (판잣집): Shack. 'Panja' means, literally, 'board'. Thus, a panjachib is a house made up of boards and other scavenged materials.

Panjachon (판자촌): Shantytown. A village composed of shacks, an informal settlement.

Pyeong (평): A traditional Korean unit of area equal to just under 4 square yards. It is equal to a Japanese tsubo (or two tatami) or a Chinese ping. A pyeong is said to be equal to the surface area occupied by an average person lying on the ground with their limbs extended, and probably arose out of a need to measure spaces in the home in cultures where people would traditionally sleep on the floor, especially in Korea, where floors were heated in winter. Although a 1961 law forced traditional units of measurement to be replaced with the metric system, the pyeong remains the standard unit used in real estate transactions to this day.

San dongnae (산동네): Mountain village, settlement on the hills. Alternative denomination to *dal dongnae*.

Shin doshi (신도시): New town.

Shin shigaji (신시가지): A new section of a city, new town.

Tanji (단지): The Sino-Korean term *tanji* is composed of two ideograms: *tan*, meaning sphere, mass, envelop or limit; and *chi*, meaning Earth or sun. The term seems to have been introduced by Japanese colonial rulers in the 1920s and 1930s when they built industrial complexes (*kongop tanji*) that were to a certain extent self-contained (Gelézeau, 2004, p. 200).

Turnkey project: A real-estate development project in which the developer assumes all financial risks until the project reaches a certain state of completion, which is generally when the building is ready to be occupied. At the end of the project, the developer hands over the keys to the buyer. Many public housing projects work this way. A private developer takes care of everything that needs to be done to complete the project, including acquiring the land, getting permits, and designing and executing the building. Once the project is complete, it is sold to the housing authority in accordance

with the pre-established timeframe and economic conditions. This real-estate project management format involves transferring many of the decisions traditionally made by government to the private sector. It also reduces costs and execution time, facilitates coordination among the different parties involved, and provides better funding opportunities. Control over the end product is taken away from the owner, since the product depends heavily on market forces and on optimization of production assets, manpower, time and financing. Public-sector clients may intervene to create the conditions for the sale to go ahead through measures such as setting a below-market price and setting the price of building materials and manpower.

Wiseong doshi (위성도시): Satellite town.

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